

(Page 1 of 4)

Omega Chemical Operable Unit 2

Date Completed

: May 25, 2005

OVA

: MiniRae

Project No. CA000646.0001

Logged By Checked By

: Ronald Halpem, PG : Ronald Halpern, PG

Driller **Drilling Method** 

: Mud Rotary

**Drilling Company** 

: WDC

Diameter

: 9.75

Drill Ria

· Mud Rotani

			_	1		Drill	Rig	: Mud Rotary	Calibration Gas/Conc : 100 ppm isobutylene
Depth in Feet	Samples	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well: EW-1 Elev.: 152.43
0-			T				7 7	Grass surface to ~6".	CHALLES .
-			08:25					(Off mud-return) SILT with CLAY and SAND, ~10-20% Sand, black (7.5YR	Surface Casing
5-	_		08:33					(Off mud-return) CLAYEY SILT, soft, (5Y 4/4), moist.	olive
10-	_		08:40					Same as above.	95% Cement/ 5% Benseal Slurry
15-			08:47			ML		Same as above - medium stiff.  Increasing SAND content ~5-10% fine medium Sand (max. 1.5 mm diamete	e to er).
20-			09:01					(Off mud-return) SILT with SAND and CLAY, ~20% fine to medium Sand, ~10-20% Clay, olive brown (2.5Y 4/4)	1 ИИ

DESCRIPTION OF BORING LOCATION: On side of Burke just east of Sorenson, in greenbelt, between MW-8A and MW-8D.

NOTES: Depth in feet below ground surface (bgs). Centralizers on sump and at 40 feet bgs.

:OMMONIMTech5\Omega Chemica\\EW-1.BOR



(Page 2 of 4)

Omega Chemical Operable Unit 2

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Diameter

: 9.75

			1			Drill	Rig	: Mud Rotary (	Calibration Gas/Conc : 100 ppm isobutylene
Depth in Feet	Samples	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well: EW-1 Elev.: 152.43
25-						ML			
30-						SP/SW		(Off mud-return) Poorly graded SAND, predominantly (~80%) fine to medium 2 mm diameter), ~20% coarse (max 5 diameter)  Same. Lots of "chatter" from 30-37', possible gravel.	(max. 5 mm
35-	-		09:27					Same as above.	95% Cement/ 5% Benseal Slurry
-						SP		(Off mud-return) Poorly graded SAND,	fine 4" Dia Sch 80
-						SP/SW		to medium grained (max. 1 mm diamet olive brown (2.5Y 4/4), wet.	ter), PVC Blank
1						SP		Some chatter ~38-39'. Well graded SA	AND AND
40-	-		09:32			SP		Poorly graded SAND, as above.	
45-			09:45			sw		(Off mud-return) Well graded SAND, fir coarse Sand, (max. 5 mm diameter), subangular to subrounded.	ne to
-									
50									

DESCRIPTION OF BORING LOCATION: On side of Burke just east of Sorenson, in greenbelt, between MW-8A and MW-8D.

NOTES: Depth in feet below ground surface (bgs). Centralizers on sump and at 40 feet bgs.

OMMON/MTech5\Omega Chemical\EW-1.BOR



(Page 3 of 4)

Omega Chemical Operable Unit 2

Date Completed

: May 25, 2005

OVA

: MiniRae

Project No. CA000646.0001

Logged By Checked By : Ronald Halpern, PG : Ronald Halpern, PG Driller **Drilling Method** 

: Mud Rotary

	P 4						ing Comp Rig		meter ibration Gas/Conc	: 9.75 : 100 ppm isobutylene
Depth in Feet	Samples	Lab No.	Time	OVA	Recovery %	USCS	GRAPHIC	DESCRIPTION	Well: EW Elev.: 15	
55-			09:55			sw		Lot of chatter at 55'. Well graded SAND with Gravel, ~20-30% Gravel, ~70-80% well-graded fine to coarse Sand, Gravel		—95% Cement/ 5% Benseal Slurry
60-	_		10:00					well-graded fine to coarse Sand, Gravel (max 15 mm diameter) (subrounded, igneous rock with quartz and mafic materials).  (Off mud-return). SILT, olive brown.		—4" Dia Sch 80 PVC Blank —Medium Chips —#30 Transition Sand
65				,		ML				
70-	_		10:26			SP		(Off mud-return) Poorly graded SAND, fine to medium grained.		−#2/12 Sand Pack −4" Dia Sch 80 PVC w/0.02" Slotted Scre
75						CL		(Off mud-return) Chattering stopped at ~73'. SILTY CLAY with SAND, ~10-20% fine to medium Sand, occasional fine Gravel, olive brown, soft to medium stiff.		

DESCRIPTION OF BORING LOCATION: On side of Burke just east of Sorenson, in greenbelt, between MW-8A and MW-8D.

NOTES: Depth in feet below ground surface (bgs). Centralizers on sump and at 40 feet bgs.

COMMON/MTech5/Omega Chemical/EW-1.BOR



(Page 4 of 4)

Omega Chemical Operable Unit 2

**Date Completed** 

: May 25, 2005

OVA

: MiniRae

Project No. CA000646.0001

Logged By Checked By : Ronald Halpern, PG : Ronald Halpern, PG Driller **Drilling Method** 

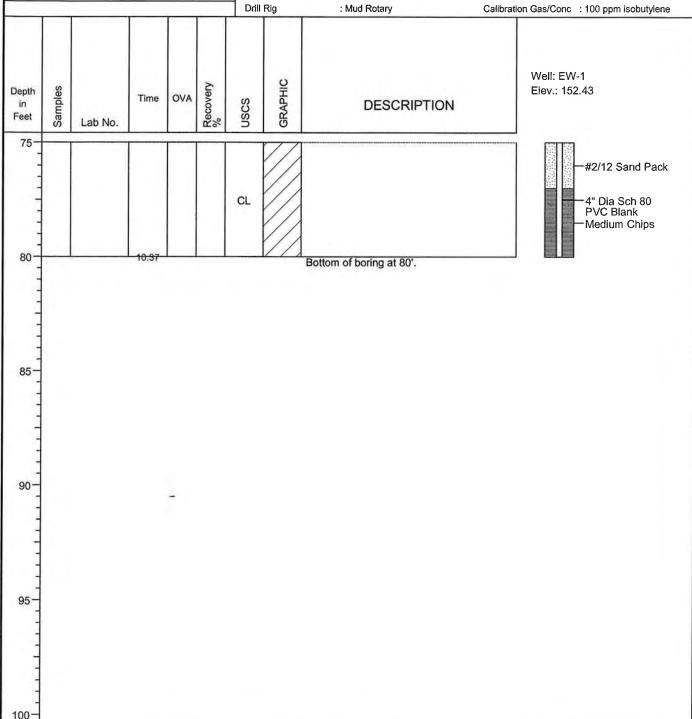
: Mud Rotary

**Drilling Company** 

: WDC

Diameter

: 9.75



DESCRIPTION OF BORING LOCATION: On side of Burke just east of Sorenson, in greenbelt, between MW-8A and MW-8D.

NOTES: Depth in feet below ground surface (bgs). Centralizers on sump and at 40 feet bgs.

## WESTERN.

### WELL NUMBER MW01A PAGE 1 OF 2

1/10/2006				74.515.0		21		DATE STARTED 12/11/01		
		100		a OU-02	_					
1-6-15-17-18			ttier, CA						PVC /	4-inch
DRIL	LING M	ETHO	Hol	low Stem	Auger	, 10-incl	n Diameter	SCREEN TYPE/SLOT Sch. 40 PV	C / 0.02	0-inch
2.000			ON _1						d/5% Be	entonite / 140 gal.
			158.21							
1000	SED BY	B.	Clarke					GROUND WATER ELEVATION 12	7.8	
REMA	ARKS					F 1				
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHO	DLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
NM			AUGER	1	SP-	XXXX	Asphalt		0.4	Traffic-rated
					.SM.		FILLGravelly, silty in Yellowish brown to be fine sandy SILT, slig	sand, dense brown (10YR 5/4 to 10YR 5/3) SILT to htly moist, medium soft.	1.0	Vault Rapid-set Concrete
		0	NR	5 -	IVIL					
		36	CORE							
0.0		60	CORE	- 10-	CL- ML		Dark brown (10YR 3) plasticity, slightly mo	/3) silty CLAY, slight to medium ist, stiff.	8.5	
					CL- ML		blocky.	Y, as above, more silt, slightly	12.0	
0.0		0	NR (	 -15-	ML		Dark yellowish browr medium elasticity, sli crumbly.	n (10YR 3/4) clayey SILT, slight to ightly moist, slightly blocky and		
1/2		48	CORE			HHH	THE ACTUAL CONTROL OF		_ 16.5	
				-		Ш	fine sand.	clayey SILT, as above, with trace		
W SHEKWAN OAKS		60	CORE	 20	ML					Portland Cement Grout w/ 5% Bentonite
U65.GFJ RF									_24.0	Sch. 40 PVC Blank Casing
0.0		60	CORE	- 25-	ML		trace to little clay, ver		26.3	
OME					_ ML_	HHF	Dark yellowish brown	fine sandy SILT.	26.8	
ONLOG					ML		Dark yellowish brown	clayey SILT, blocky partings.	00.0	
20				-30-	CL			(10YR 4/4) silty CLAY, trace fine	29.3	
BORING/WELL COND I RUCTION LOG OMEGA WELL LOGS, GPJ RFW SHERMAN OAKS.  O O O O O O		60	CORE		ML		4/3) SILT, trace to litt	to dark brown (10YR 3/4 to 10YR le clay, trace very fine sand, slightly very moist at 31.5 feet, wet at 34 feet.	30.5	
בַּרְ									35.0	

### WELL NUMBER MW01A

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/11/01

PROJECT NAME Omega OU-02

DATE COMPLETED 12/11/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WE	ELL DIAGRAM
0.2		60	CORE			ML		Dark grayish brown (10YR 4/2) fine SILT, non-plastic, mottled with oxides, micaceous, wet, soft.  □  □  □  □  □  □  □  □  □  □  □  □  □	38.0		−Medium
		0	NR	0	 40 	SM		well sorted, micaceous, locally grading to fine sandy silt.	41.5		Bentonite Ch
0.2		42	CORE			ML SP		Dark grayish brown (2.5Y 4/2) fine sandy SILT.  Dark grayish brown (2.5Y 4/2) fine to medium SAND,	43.0		
NM		0	NR	0		CW		medium to well sorted, saturated, dense.  Dark grayish brown fine to coarse SAND, trace to little subrounded gravel to 1 to 2-inch, medium sorting, saturated, dense.	144.0		4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		36	CORE			sw			49.5		
1.7		0	NR CORE	0	-50- 	SP		Olive gray (5Y 4/2) fine SAND to fine to medium SAND, very well to well sorted, trace silt, trace clay, with 2-inch fine sandy silt layer at base	10.0		#3 Monterey Sand
						 sw	0 0	Dark grayish brown (2.5Y 4/2) gravelly fine to coarse SAND, medium sorted, gravel to 1.5-inch.	53.5 55.0		Sch. 40 PVC 0.02-inch Slotted Well Screen (45 to
0.7		0	NR	0	-55- 	SP- SM		Light olive brown (2.5Y 5/4) silty fine to medium SAND, medium sorted, trace fine gravel to 3/4-inch, trace clay, slightly moist, slightly cemented.  Light olive brown medium to coarse SAND, trace gravel to	56.0		60 feet bgs)
5.47		24	CORE		- 60-	SP SM	hi	3/4-inch, saturated, very dense.  Pale olive (5Y 6/3) silty fine to medium SAND, trace clay,	59.5 60.0		
2.1								wet/saturated, very slightly cemented.  Bottom of borehole at 60.0 feet.			



### WELL NUMBER MW01B PAGE 1 OF 3

			R 200				DATE STARTED 12/27/01  DATE COMPLETED 12/27/01
LOCA	ATION	W	ittier, CA				CASING TYPE/DIAMETER C-1 40 DVC 444
					m Auge	r, 10-inc	
SAME	PLING N	METH	OD _C	ontinuo	us 5-fool	Core	The state of the s
			ION _1				GROUT TYPE/QUANTITY Portland/5% Bentonite / 230 gal.
TOP (	OF CAS	ING	158.09	}			DEPTH TO WATER _ 30.4
LOGG	GED BY	_B	. Clarke A	A. Coha	n		GROUND WATER ELEVATION127.8
REMA	ARKS	Lith	ology to 6	50 feet f	rom MV	/01A	127.8
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	DEPTH	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION  LT T  LD T
NM		60	AUGER				Asphalt
		0	NR (	5 - 5 -	SP- SM.	****	Fill-Gravelly, silty sand, dense Yellowish brown to brown (10YR 5/4 to 10YR 5/3) SILT to fine sandy SILT, slightly moist, medium soft.
0.0		60	CORE	- - - - -	CL- ML		Dark brown (10YR 3/3) silty CLAY, slight to medium plasticity, slightly moist, stiff.
				-	CL- ML		Dark brown silty CLAY, as above, more silt, slightly blocky.
		0	NR C	15-	ML		medium elasticity, slightly moist, slightly blocky and crumbly.  Portland Cement Grown (10YR 3/4) clayey SILT, slight to medium elasticity, slightly moist, slightly blocky and crumbly.
		40	CORE	-			Dark yellowish brown clayey SILT, as above, with trace fine sand.
0.2		60	CORE		ML		
0.0		60	CORE	  25	ML		Dark yellowish brown (10YR 4/4) SILT, trace fine sand, trace to little clay, very slight plasticity.
1					M	1.1.1	26.3
					ML		Dark yellowish brown fine sandy SILT.  Dark yellowish brown clayey SILT, blocky partings.
				-			29.3
0.0		60	CORE	-30- 	CL		Dark yellowish brown (10YR 4/4) silty CLAY, trace fine sand.  Dark yellowish brown to dark brown (10YR 3/4 to 10YR 4/3) SILT, trace to little clay, trace very fine sand slightly.
					ML		micaceous, moist to very moist at 31.5 feet, wet at 34 feet.

### WELL NUMBER MW01B PAGE 2 OF 3

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/27/01

PROJECT NAME Omega OU-02

DATE COMPLETED 12/27/01

(E)	Z S	S)	Ω.	5	ıΩ	Ś	₽		P.		
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WE	LL DIAGRAM
0.2		60	CORE			ML		Dark grayish brown (10YR 4/2) fine sandy SILT, non-plastic, mottled with oxides, micaceous, wet, soft.	38.0		0-1- 40 F) (0
		0	NR	0	- -40-	SM		Dark grayish brown (2.5Y 4/2) silty very fine SAND, very well sorted, micaceous, locally grading to fine sandy silt.			Sch. 40 PVC Blank Casing
0.2		42	CORE	П		ML	怞	Dark grayish brown (2.5Y 4/2) fine sandy SILT.	41.5		
NM		0	NR	0	  -45	SP		Dark grayish brown (2.5Y 4/2) fine to medium SAND, medium to well sorted, saturated, dense.  Dark grayish brown fine to coarse SAND, trace to little subrounded gravel to 1 to 2-inch, medium sorting, saturated, dense.	44.0		
		36	CORE			SVV			49.5		Portland Cement Grou w/ 5% Bentonite
1.7		0 42	NR CORE		-50- 	SP		Olive gray (5Y 4/2) fine SAND TO fine to medium SAND, very well to well sorted, trace silt, trace clay, with 2-inch fine sandy silt layer at base.			Bernome
						SP	0 0	Dark grayish brown (2.5Y 4/2) gravelly fine to coarse SAND, medium sorted, gravel to 1.5-inch.	_53.5 55.0		
0.7		0	NR	0	55 	SP- SM.		Light olive brown (2.5Y 5/4) silty fine to fine SAND, medium sorted, trace fine gravel to 3/4-inch, trace clay, slightly moist, slightly cemented.  Light olive brown medium to coarse SAND, trace gravel to	56.0		
		24	CORE	П		SP		3/4-inch, saturated, very dense.	59.5		
		0	NR		-60 	SM		Pale olive (5Y 6/3) silty fine to medium SAND, trace clay, wet/saturated, very slightly cemented.	62.0		
2.1		36	CORE					Olive brown (2.5Y 4/3) fine to medium SAND, trace silt, trace subrounded gravel to 1/2-inch toward base, medium sorted, wet.	_02.0		
		0	NR		65 	SP					
		12	CORE	ı I		:SM:	14.	Olive brown (2.5Y 4/4) silty fine SAND, micaceous, well	69.0 69.5		- Bentonite Pe Seal
		0	NR	0	-70- 	sw	» ()	sorted, wet.  Olive brown gravelly fine to coarse SAND, trace silt, gravel subrounded to subangular and 1/2 to 1-1/2 inch, medium			Geal
0.7		36	CORE			sw	7	Sorted, wet, partly cemeted at 70 feet bgs.  Olive brown fine to coarse SAND, little subrounded gravel  1/8 to 2-inch, poorly sorted, wet.	72.0		
	العيل					SP			74.0		



#### WELL NUMBER MW01B

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12/27/01 20074.515.009.0321 DATE STARTED PROJECT NUMBER DATE COMPLETED 12/27/01 PROJECT NAME Omega OU-02 Continued from Previous Page RECOVERY (inches) CONTACT GRAPHIC LOG SAMPLE ID. BLOW PID (ppm) DEPTH (ft. BGL) U.S.C.S. EXTENT LITHOLOGIC DESCRIPTION WELL DIAGRAM Olive brown fine to medium SAND, trace silt, trace gravel, 0 NR micaceous, cemented at 75 feet bgs. (continued) SP 77.0 Olive brown medium to coarse sandy GRAVEL, clasts 36 CORE GP subrounded 1/8 to 1-inch. 78.3 Olive brown clayey SILT, trace fine sand, micaceous.

Olive brown fine SAND, little silt, micaceous, well sorted, ML 78.5 #3 Monterey Sand Sch. 40 PVC 0 NR SP 0.02-inch Slotted Well Screen (75 to 82.5 85.4 feet bgs) Dark grayish brown (2.5Y 4/2) fine to medium SAND, few CORE 0.5 30 coarse grains, 1-inch silt lens, wet. SP 85.0 Olive brown (2.5Y 4/4) silty CLAY, slightly plastic, stiff. CORE 0.3 60 CL 90.0 Bentonite Pellet Olive brown silty CLAY, trace subrounded gravel 1/8 to CORE 60 0.2 Backfill 1/4 inch, stiff. CL 95.0 95 Bottom of borehole at 95.0 feet. BORING/WELL CONSTRUCTION LOG OMEGA WELL LOGS.GPJ RFW SHERMAN OAKS.GDT 1/22/03 NM

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### WELL NUMBER MW02A PAGE 1 OF 2

PROD LOCA DRILL SAMI GROU TOP ( LOGO	JECT NATION LING M PLING I UND EL OF CAS	AME Wh ETHO METHO EVAT	ION	llow onti	Stem nuous	Augei 5-foot	r, 10-inc Core	h Diamter	DATE STARTED	C / 0.020 y Sand/8 d/5% Ber	-inch cu. ft.	155 gal.
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOL	OGIC DESCRIPTION	CONTACT	v	/ELL DIAGRAM
NM		60	CORE		-5-	SC		Asphalt Dark brown (10YR 3/3) some calcareous clasts  Very dark brown (10YR		0.4		Traffic-rated vault Rapid-set Concrete
0.0		60	CORE		-10-	ML		Dark brown (10YR3/3) to medium plasticity, sli	clayey SILT, trace fine sand, slight ghtly moist, stiff.	9.5		
0.0		60	CORE		-15			Dark brown (10YR 3/3) (possible concretions).	silty CLAY, trace angular gravel	_17.0		
0.0		0 48	NR (		20-	ML		Dark yellowish brown (1	0YR 3/4) fine sandy CLAY.	21.0		Portland Cement Grow W/5% Bentonite
		0	NR (	-	25-	ML		Dark yellowish brown (1) moist, more plastic and	OYR 3/4) fine sandy SILT, very micaceous at 25 feet bgs.	_22.5		Sch. 40 PVC Blank Casing
0.0		48	CORE	-	-	SM		Dark brown silty fine SAI	ND ¥	26.5		
0.2		0	NR C		30-	SP				32.5		
		00	JOINE		-	SP		grained, trace silt, well so	YR 3/6) SAND, fine to medium □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	801100		

### WELL NUMBER MW02A PAGE 2 OF 2

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/12/01

PROJECT NAME Omega OU-02 DATE COMPLETED 12/12/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
35		0	NR NR	0	- - - -40-	SP		Dark yellowish brown (10YR 3/6) SAND, fine to medium grained, trace silt, well sorted, wet, trace mica. (continued)		— Bentonite Pellets
51		30	CORE		  -45- 	SW ML SW	111	Olive brown (2.5Y 4/3) gravelly SAND, poorly sorted, wet.  Dark yellowish brown (10YR4/4) fine sandy SILT.  Olive brown (2.5Y 4/3) fine to coarse SAND	42.5 43.0 43.5	
23		0	CORE	0	  50- 	SP		Medium to coarse SAND, moderate to poorly sorted, moist, 1.5-inch subrounded grains, trace of cementation with trace clay found in lower inch of sample.	52.4	#3 Montere Sand
39		0	NR	0	 - 55 	SW SW		Dark grayish brown (10YR4/2) SILTY FINE SAND, wet, soft Olive brown (2.5Y 4/3) fine to coarse SAND, moderately sorted, 1 inch subrounded to rounded gravel, moist, trace of cementation in lower portion of sample. Olive brown fine to medium SAND, cemented toward base	52.5 55.0	Sch. 40 PV 0.02-inch Slotted Wel Screen (45 60 feet bgs)
31		30	CORE		  60-			Bottom of borehole at 60.0 feet.	_60.0	

# WESTERN.

#### **WELL NUMBER MW03A**

PAGE 1 OF 2

PROJECT NA LOCATION DRILLING MI	White White ETHOD METHODE EVATION ING	Omeg tier, CA D 30 D 30 ON	qa Ol A ollow 0-inc 152.2 9	Stem / sh Split 28	Auger, Spoo	. 10-inc n	h Diamter	DATE COMPLETED 12/12/01  CASING TYPE/DIAMETER Sch.  SCREEN TYPE/SLOT Sch. 40 P  GRAVEL PACK TYPE #3 Monter  GROUT TYPE/QUANTITY Portla  DEPTH TO WATER 25.9	VC / 0. ey Sar nd/5%	020-i nd/8 d Bent	inch cu. ft. tonite / 140	
PID (ppm) BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHO	LOGIC DESCRIPTION	TOVENOO	DEPTH	WEL	L DIAGRAM
NM 0	0 24	NR CORE CORE		-10-	CL		low plasticity, slightly	(10YR 3/4), CLAY with little sand, moist, firm, no odor. Similar below ground surface (bgs).	0.			Traffic-rated vault Rapid-set Concrete
0.2 0.4	30	CORE		-20-	SC-SM CL SC-SC-SM		Dark yellowish brown clays, 60% fine sand,  Dark yellowish brown clays, 60% fine sand,  Dark yellowish brown 30% fines, 70% fine to wet, soft.	(10YR 4/4), clayey SAND, 40% moist, firm, no odor.  (10YR 4/4), SAND with clay and silt, o medium sand, subrounded, moist  (R 6/6), SILT with sand and clay, 20% les, low plasticity, moist to wet, firm,	21	5.5		Portland Cement Grou with 5% Bentonite Sch. 40 PVC Blank Casing

### WELL NUMBER MW03A. PAGE 2 OF 2

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/12/01

PROJECT NAME Omega OU-02

DATE COMPLETED 12/12/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
MM		0 27	NR CORE	0		SM		Brownish yellow (10YR 6/6), silty SAND, 40% fines, 60% fine sand, no plasticity, wet, soft, no odor, 2-inch diameter cemented nodule in shoe.	35.5	
MM		0 27	NR CORE	0	40  	SP- SM		Dark yellowish brown (10YR 4/6), SAND with silt, 20% silt and 80% fine to medium sand (predominantly medium), poorly graded, wet, soft, no odor.	40.5	#3 Montere Sand Sch. 40 PV 0.02-inch
NM		30	CORE	П	 45 	SP		Dark yellowish brown (10YR 4/6), SAND, poorly graded, predominantly medium grained, wet, soft, no odor.	47.0	Slotted Wel Screen (37. 48 feet bgs)
MM		15	CORE		  -50-	ML		Yellowish brown (10YR 5/4), SILT, 25% fine sand and 75% silt, moist, firm to hard, no odor, trace cementation, wet at 50 feet bgs.  Bottom of borehole at 51.3 feet.	51.3	Bentonite Pellets Back
								Bottom of Boteriole at 31.0 leet.		



### WELL NUMBER MW04A PAGE 1 OF 2

			R 20 Ome					DATE STARTED
			ittier, CA		0-02			DATE COMPLETED 12/10/01
					Stem	Auge	r. 10-ind	CASING TYPE/DIAMETER         Sch. 40 PVC / 4-inch           ch Diamter         SCREEN TYPE/SLOT         Sch. 40 PVC / 0.020-inch
SAME	LING N	METHO	D C	onti	nuous	30-inc	ch Split	Spoon GRAVEL PACK TYPE #3 Monterey Sand/8 cu. ft.
GROL	UND EL	EVAT	ION _	147.	39			GROUT TYPE/QUANTITY Portland/5% Bentonite / 140 gal.
			147.2					DEPTH TO WATER 23.0
LOGG	SED BY	<u>T.</u>	Mehall					GROUND WATER ELEVATION 124.4
REMA	ARKS						1	
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION  LITHOLOGIC DESCRIPTION  WELL DIAGRAM
		60	AUGER					Asphalt
2.7		30	CORE		- 5 -	ML ML		Dark yellowish brown (10YR 4/4), SILT with gravel, 90% silt and 10% medium subrounded gravel clasts, moist, soft, no odor.  Dark yellowish brown (10YR 4/4), SILT, 95% silt and trace fine sand, moist to wet, soft, no odor.
		15			1			8.5
		15	CORE			-		Very dark grayish brown (10YR 3/2), CLAY, medium plasticity, moist, firm, no odor, trace of cemented nodules
1.7	1	30	CORE		-10-	CL		at 9.5 to 10 feet below ground surface (bgs).
		30	CORE		15	CL- ML		Similar to above, consistency increases to hard, color change to dark grayish brown (10YR 4/2).  Moisture decreases to slightly moist, increased silt content, lower plasticity.
1.2		30	CORE	L	-15-			
		30	CORE		1	SW- SC		Dark yellowish brown (10YR 3/4), SAND with clay, 75% fine to coarse sand, 25% clay, well graded, subrounded, moist, no odor, trace of fine gravel.  Dark grayish brown (10YR 4/2), CLAY, low plasticity, firm, slightly moist to moist, no odor. Slight increase in
0.7		30	CORE	1	-20-			plasticity at 20 feet bgs. Trace cementation at 21.5 and with 5%
				r	1			Bentonite
		30	CORE	-		CL		▼ Sch. 40 PV0 Blank Casin
0.7		30	CORE	+	25-			
35.			00,12	ŀ	1			
		30	CORE	-	-	CL		No significant change from above, 75% fines and 25% fine sand, decrease plasticity to low, slightly moist, no odor.
					20 ]			Dark yellowish brown (10YR 4/6), sandy SILT, slightly moist, hard, no odor.
		0	NR C		30-	ML		
2.7		15	CORE					
		30	CORE			SP		Dark yellowish brown (10YR 4/6), SAND, fine to medium grained (predominantly medium), poorly graded, subangular, wet, no odor.

#### **WELL NUMBER MW04A**

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PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/10/01

PROJECT NAME Omega OU-02

DATE COMPLETED 12/10/01

PID (ppm) BLOW COUNTS	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WE	LL DIAGRAM
7.5	30	CORE		-	SP		Dark yellowish brown (10YR 4/6), SAND, fine to medium grained (predominantly medium), poorly graded, subangular, wet, no odor. (continued)	37.0		
	30	CORE	H		sw	o.U.	Dark brown well graded SAND with gravel (25% fine sand, 50% medium sand, 25% coarse sand), 90% sand with 10% gravel, subrounded to rounded sand, wet, no odor.	38.5		- Bentonite Chir
	30	CORE	Ц	 -40-	SP	8XX	Dark yellowish (10YR 4/6) poorly graded sand, fine to medium (predominantly medium), subangular, wet, no odor.	40.0		
0					SW- SC		Dark grayish brown (10YR 4/2) well graded SAND with clay and gravel, (20% clay, 10% medium gravel subrounded, 70% SAND). SAND comprised of 20% fines,	43.0		
	30	CORE		  -45-	sw	9 D	40% medium, 40% coarse, subangular, wet, no odor.  Gray (10YR 5/1), SAND, 15% gravel and 85% well graded sand (20% fine, 40% medium, and 40% coarse), subangular, wet, no odor.	45.5		
0	30	CORE			SM		Silty SAND in sluff	47.5		#3 Monterey Sand
0	0	NR	0		SM- SW		Gray (10YR 5/1), silty SAND, similar to above, bottom 1/2 foot well graded SAND (SW) with coarse gravel, 25% gravel, 75% SAND (20% Fines, 50% medium, and 30%			Sch. 40 PVC 0.02-inch Slotted Well
MM	0	CORE	С	-50-		1111	coarse), subangular to subrounded, wet.  Sluff contains poorly graded sand and silty sand, wet, no odor.	50.0		Screen (42.7 53 feet bgs)
	15	CORE	Ī		SP		3331.	53.0		



PAGE 1 OF 4

GROU TOP (	PLING M JND EL OF CAS SED BY	METHO EVATIONS	D _ C ON _ 147.2 Clarke	147. 3-M	.40-MV W04B	5-foot V04B; ; 147.1	Core 147.39 0-MW0	CASING TYPE/DIAMETER Sch. 40 PVC / 0.  SCREEN TYPE/SLOT Sch. 40 PVC / 0.  GRAVEL PACK TYPE #3 Monterey San  MW04C GROUT TYPE/QUANTITY Portland/5%  4C DEPTH TO WATER 22.9  GROUND WATER ELEVATION	0.020-i and/8 c is Bent	ou. ft. onite / 150 gal.
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
			AUGEF		- 5	SC		Dark yellowish brown (10YR 4/4), SILT with gravel, 90% silt and 10% medium subrounded gravel clasts, moist, soft, no odor.  5.  Dark yellowish brown (10YR 4/4), SILT, 95% silt and trace fine sand, moist to wet, soft, no odor.  Very dark grayish brown (10YR 3/2), CLAY, medium plasticity, moist, firm, no odor, trace of cemented nodules at 9.5 to 10 feet below ground surface (bgs).  Similar to above, consistency increases to hard, color change to dark grayish brown (10YR 4/2).  Moisture decreases to slightly moist, increased silt content, lower plasticity.	6.5	Traffic-rate vault Rapid-set concrete
					-25-	CL		No significant change from above, 75% fines and 25% fine sand, decrease plasticity to low, slightly moist, no odor.  Dark yellowish brown (10YR 4/6), sandy SILT, slightly moist, hard, no odor.	X	
				-		SP		Dark yellowish brown (10YR 4/6), SAND, fine to medium grained (predominantly medium), poorly graded, subangular, wet, no odor.	.0 0.1	Portland Cement Gro w/ 5% Bentonite



PAGE 2 OF 4

DATE STARTED 12/17/01

PROJECT NAME Omega OU-02

DATE COMPLETED 12/18/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WE	LL DIAGRAM
				1		SP		Dark yellowish brown (10YR 4/6), SAND, fine to medium grained (predominantly medium), poorly graded, subangular, wet, no odor. (continued)	37.0		Sch. 40 PVC Blank Casing
				1		sw	6 N	Dark brown well graded SAND with gravel (25% fine sand, 50% medium sand, 25% coarse sand), 90% sand with 10% gravel, subrounded to rounded sand, wet, no odor.	38.5		
				1	- -40-	SP	8XIV	Dark yellowish (10YR 4/6) poorly graded sand, fine to medium (predominantly medium), subangular, wet, no odor.	40.0		
				1		SW- SC		Dark grayish brown (10YR 4/2) well graded SAND with clay and gravel, (20% clay, 10% medium gravel subrounded, 70% SAND). SAND comprised of 20% fines, 40% medium, 40% coarse, subangular, wet, no odor.	43.0		
				1	 - 45-	sw	6 O	Gray (10YR 5/1), SAND, 15% gravel and 85% well graded sand (20% fine, 40% medium, and 40% coarse), subangular, wet, no odor.	45.5		
				1		SM		Silty SAND in sluff			
						SM- SW		Gray (10YR 5/1), silty SAND, similar to above, bottom 1/2 foot well graded SAND (SW) with coarse gravel, 25% gravel, 75% SAND (20% Fines, 50% medium, and 30% coarse), subangular to subrounded, wet.	_47.5 50.0		
					-50- 	SP		Sluff contains poorly graded sand and silty sand, wet, no odor.			
		0	NR	1	 - 55- 	SM		Dark yellowish brown (10YR 3/4), silty SAND (25% silt, 75% fine sand), wet, no odor.	53.0		
MM		60	COR	E		ML		Olive brown (2.5Y 5/3), very fine sandy SILT, micaceous,	60.0		
						ML		low plasticity, moist, medium stiff.  Dark olive 2.5Y 4/3 and 2.5Y 5/1 slightly mottled clayey SILT, grading to (CL) silty CLAY, slight to medium plasticity, moist, medium stiff.	63.0		
				H	-	ML ML		Fine sandy SILT, slightly micaceous. Clayey SILT, medium plasticity, medium stiff. Light olive brown (2.5Y 5/4), silty fine SAND, 5% clay,	63.5 64.0		- Lower 2.5'-Bentonit
		0 48	NR COR	$\subseteq$	65 	SM		55% fine sand and 40% silt, well sorted, grading into a fine to medium SAND, 45% fine sand, 10% medium sand and 40% silt, micaceous.	67.5	Wa Wa Wa	Pellets, Uppe 3.3'-Bentonit Chips
NM		0	NR		  -70-	SP		Dark gray (5Y 4/1) well sorted SAND (75% fine sand, 10-25% medium sand), 0-10% SILT, wet, medium dense.	5,,,0		
				0							−#3 Monterey Sand



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PROJECT NUMBER 20074.515.009.0321 DATE STARTED 12/17/01 PROJECT NAME Omega OU-02 DATE COMPLETED 12/18/01 Continued from Previous Page RECOVERY (inches) GRAPHIC LOG SAMPLE ID CONTACT BLOW PID (ppm) DEPTH (ft. BGL) U.S.C.S. EXTENT LITHOLOGIC DESCRIPTION WELL DIAGRAM NR 0 Dark gray (5Y 4/1) well sorted SAND (75% fine sand, 10-25% medium sand), 0-10% SILT, wet, medium dense. (continued) SP Sch. 40 PVC 0.02-inch 79.0 Slotted Well CORE SP NM Grading to dark grayish brown (2.5Y 4/2), SAND, 60% 79.5 12 Screen (69.7 to 80 medium sand and 40% fine sand 0 NR CL 80 feet bgs) Gray (2.5Y 5/1) silty CLAY, medium plasticity, moist, medium stiff, some nodules. 81.5 CL-Olive to gray (5Y 5/1 and 5Y 5/4), clayey SILT to silty NM 42 CORE 82.5 ML CLAY, 10% very fine sand, very slightly plastic, Bentonite hard/cemented. Pellets Olive (5Y 5/4), Clayey SILT to very fine sandy SILT, moist, non-plastic, medium stiff. Grades into a fine sandy SILT, 30 % fine sand, 60% silt and 10% clay, moist, non-plastic. NR 0 ML #3 Monterey Sand 88.5 Dark grayish brown to dark yellowish brown (2.5Y4/2 to 10YR 4/4), silty fine SAND, 60% fine sand, <10% medium NM 18 CORE sand, 30% silt and 5% clay, cohesive, very well sorted, 0 NR slightly micaceous. SM 93.5 Olive brown (2.5Y 4/3), fine to medium SAND, 30% fine NM 18 CORE Sch. 40 PVC SP 94.5 sand, 70% medium sand, trace rounded 1/2-inch gravel, 0.02-inch Slotted Well NR OMEGA WELL LOGS.GPJ RFW SHERMAN OAKS.GDT 1/22/03 0 Dark grayish brown (2.5Y 4/2), fine to medium sand, 70% Screen (88.7 to SP. fine sand, 20% medium sand, 10% silt, wet, dense. 99 feet bgs) SM 98.0 NM CORE Olive brown (2.5Y 4/3), clayey SILT with trace very fine 24 ML sand, medium plasticity, moist, stiff, slightly micaceous. 99.5 Dark grayish brown (2.5Y 4/2), fine sandy SILT, 70% silt, O NR 25% fine sand and 5% clay, very slightly plastic, moist to Bentonite Chips NM CORE ML very moist, medium stiff, slightly micaceous, grading into and Pellets silty very fine sand, slightly micaceous. 102.5 Clayey SILT, medium plasticity, very stiff.

Dark grayish brown to olive brown (2.5Y 4/2 to 2.5Y 4/4), ML 103.0 ML fine sandy SILT, 25% fine sand, 60% silt and 15% clay, trace fine subangular 1/4-inch gravel, slightly mottled. 105.0 CORE Grading into an olive brown (2.5Y 4/3), very fine to fine NM sandy CLAY, 50% clay, 30% silt and 20% fine sand, trace subangular to rounded 3/4-inch gravel, very slightly plastic, moist, very stiff to hard. At approximately 107.5 feet, increase in silt and sand, color change to gray and BORING/WELL CONSTRUCTION LOG brown (10YR 5/1 and 10YR 5/3). 0 NR 111.0 NM CORE 48 Medium **Bentonite Chips** 



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PROJECT NUMBER 20074.515.009.0321 DATE STARTED 12/17/01 PROJECT NAME Omega OU-02 DATE COMPLETED 12/18/01 Continued from Previous Page RECOVERY (inches) BLOW SAMPLE ID. GRAPHIC LOG CONTACT PID (ppm) DEPTH (ft. BGL) U.S.C.S. EXTENT LITHOLOGIC DESCRIPTION WELL DIAGRAM Olive brown to gray (2.5Y 4/3 to 10YR 5/1), very fine to fine sandy CLAY, medium plasticity, stiff to very stiff, trace subangular 1/4-inch gravel. Color change at 114 feet bgs to very dark grayish brown (10YR 3/2) with sand, medium to high plasticity. At 120 feet bgs, continuing very fine sandy CLAY, 70% clay, 15% silt and 15% very fine sand, medium plasticity, very stiff to hard. (continued) NM CORE 60 CL NM CORE 60 Medium Bentonite Chip 125.0 NM Bottom of borehole at 125.0 feet. BORING/WELL CONSTRUCTION LOG OMEGA WELL LOGS.GPJ RFW SHERMAN OAKS.GDT 1/22/03



### WELL NUMBER MW05A PAGE 1 OF 2

DRILI SAME GROU TOP (	ATION LING M PLING M UND EL OF CAS	White ETHOREMETH	ON _ Co ON _ 1 _ 151.57 Clarke	low Ste ontinuo 51.78	em Auger us 5-foot	Core	DATE STARTED 12/10/01  DATE COMPLETED 12/10/01  CASING TYPE/DIAMETER Sch. 40 PVC / 4-inch  Ch Diamter  SCREEN TYPE/SLOT Sch. 40 PVC / 0.020-inch  GRAVEL PACK TYPE #3 Monterey Sand/8 cu. ft.  GROUT TYPE/QUANTITY Portland/5% Bentonite / 140 gal.  DEPTH TO WATER 24.4  GROUND WATER ELEVATION 127.4
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	DEPTH	(ft. BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION  LUTHOLOGIC DESCRIPTION  WELL DIAGRAM
NM		0	NR (CORE	- - - 5	SM		Asphalt Light olive brown (2.5Y 5/4), silty fine SAND, slightly moist to moist, medium dense. Color changes to olive brown (2.5Y 4/3) at 6.5 feet below ground surface (bgs) and changes back to light olive brown at 7.5 feet bgs.
0.4		60	CORE	- - 10 -	SP		Light olive brown (2.5Y 5/3), fine SAND with trace silt, moist to wet at 10 feet bgs.  Light yellowish brown to light brownish gray (2.5Y 6/4 to 2.5Y 6/2), clayey SILT, medium elasticity, very moist, medium soft, mottled oxides, pore holes.
0.1		0 48	NR (	- - ) - -	CL		Very dark grayish brown (2.5Y 3/2), silty CLAY, slight to medium plasticity, moist, medium stiff to stiff, mottled with white stringers, a few oxide root casts, blocky. Color changes to dark brown (10YR 3/3) at 17 feet bgs and then to dark yellowish brown (10YR 4/4) at 19.5 feet bgs.
0.0		60	CORE	- 20- - -	ML		Yellowish brown (10YR 5/4), fine sandy SILT, very slight elasticity, moist, medium stiff, slightly mottled, blocky, clayier downward.
0.0		0 54	NR C	- - 25-	CL		Dark yellowish brown (10YR 4/4 to 10 YR 3/4), silty CLAY, medium plasticity, blocky, white stringers, phacoidal.  Trace fine sand at 25 feet bgs.
0.0		0 54	NR O	- - -30- -	CL		Dark grayish brown (2.5Y 4/2), CLAY, abundant light gray and white stringers. Grades into an olive brown (2.5Y 4/3), silty CLAY, very moist, medium stiff.  Grayish brown to dark grayish brown (2.5Y to 2.5Y 4/2), clayey to fine sandy silt, very slight elasticity, very moist to wet, medium soft, mottled oxides, stringers, calcite nodules, micaceous. More fine sand at 33 feet bgs, non-plastic.



## WELL NUMBER MW05A

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/10/01

PROJECT NAME

Omega OU-02

DATE COMPLETED 12/10/01

PID (ppm)	BLOW	RECOVERY (inches)		EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WEL	L DIAGRAM
		0	NR	0		ML		Grayish brown to dark grayish brown (2.5Y to 2.5Y 4/2), clayey to fine sandy silt, very slight elasticity, very moist to wet, medium soft, mottled oxides, stringers, calcite nodules, micaceous. More fine sand at 33 feet bgs, non-plastic. (continued)			– Bentonite Chi
ММ		60	CORE		-40- 	ML		Dark gray to grayish brown (2.5Y 4/1 to 2.5Y 5/2), fine sandy SILT, very slight elasticity, wet, medium soft, mottled yellowish oxides. Grades into SILT, with zero to trace fine sand at 42 feet bgs, medium elasticity, slightly micaceous.	40.0		
		0	NR		-45- -45-	ML SP_ ML		Clayey SILT to SILT, medium elasticity, very moist to wet.  Dark grayish brown (2.5Y 4/2), fine to medium SAND, trace silt, well sorted, saturated.  (5Y 5/2 to 5Y 5/3) very fine sandy SILT, non-plastic, cohesive	44.0 44.5 46.5		
		30	CORE			SP		Dark grayish (2.5Y 4/2) fine to medium SAND, saturated, well sorted, medium dense	48.5		-#3 Monterey Sand
13		0	NR	0	 -50- 	sw		Grayish brown to olive brown (2.5Y 5/2 to 2.5Y 4/3), medium to coarse sand, subangular sand grains, little to some subrounded to subangular 1/2-3-inch gravel, dense, saturated.	10.0		Sch. 40 PVC 0.02-inch Slotted Well Screen (43.3) 53.3 feet bgs)
NM								Bottom of borehole at 53.0 feet.			



### WELL NUMBER MW06A PAGE 1 OF 2

PROD LOCA DRIL SAMI GROU TOP (	JECT N. ATION LING M PLING M UND EL OF CAS	AME WITH ETHO METH EVAT	Omenittier, CA	ga ( A) ollov ont 150	v Stem inuous	Auge 30-in	er, 10-ir ch Spli	DATE STARTED 12/13/01  DATE COMPLETED 12/13/01  CASING TYPE/DIAMETER Sch. 40 PVC / 4-inch  SCREEN TYPE/SLOT Sch. 40 PVC / 0.020-inch  Spoon GRAVEL PACK TYPE #3 Monterey Sand/8 cu. ft.  GROUT TYPE/QUANTITY Portland/5% Bentonite / 140 gal.  DEPTH TO WATER 24.1  GROUND WATER ELEVATION 126.6
PID (ppm)	BLOW	RECOVERY	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC	LITHOLOGIC DESCRIPTION  LITHOLOGIC DESCRIPTION  WELL DIAGRAM
		60	AUGEF			ML- SM		Landscaped lawn Very dark gray (10YR 3/1), silty SAND, 40% silt and 60% fine sand, soft, moist, no odor.  Traffic-rated Vault Rapid-set Concrete
0.2		30	CORE		- 5 <del>-</del>	SM		Yellowish brown (10YR 5/6), silty SAND, 20% silt and 80% fine sand, moist, soft, no odor.
0.2		0 24 30	NR CORE	0	 -10-	ML		Yellowish brown (10YR 5/6), SILT with sand, 15% fine sand and 85% silt, moist to wet, soft, no odor.  Very dark grayish brown (10YR 3/2), CLAY, low to medium plasticity, moist, no odor, some rootlets present. Increase in plasticity to medium at 13.5 feet below ground surface (bgs), still a trace of rootlets.
0.4		30	CORE		-15-			Dark yellowish brown (10YR 3/6), silty SAND, 30% silt and 70% fine sand, moist, soft, no odor. Increase clay content
		30	CORE	-	-20-	SM		Dark grayish brown (10YR 4/2), clayey SAND, 25% clay
0.2		30	CORE		-	sc sc		and 75% fine sand, low plasticity, moist, no odor, trace roots. Color change from 20 to 22 feet bgs to a dark yellowish brown mixed with dark gray (10 YR 4/1) and dark yellowish brown (10YR 4/4).  Dark yellowish brown (10YR 4/4) clayey SAND, 25% clay, 23.5
0.2		0 23	NR ( CORE	2	-25-	SC- CL		moist, no odor  Dark yellowish brown (10YR 4/6), sandy CLAY to clayey SAND, 40% clay and 60% fine to medium sand, medium plasticity, slightly moist, hard, no odor
		0	NR C	7	-	sc		Reddish brown (5YR 4/3), clayey SAND, 80% fine to medium sand and 20% clay, low plasticity, moist, soft, no 28.5
0.2		200	CORE	L	30-	SP		Dark yellowish brown (10YR 4/4) poorly graded SAND, fine to coarse grained (predominantly medium), subrounded, wet, no odor.
		0	NR CORE	+		SP		Trace medium to coarse subrounded gravel at 31, 39, and 43 feet bgs. No significant change observed in the lithology from 32 to 46 feet bgs.  Bentonite Pellets

WELL NUMBER MW06A PAGE 2 OF 2

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/13/01

PROJECT NAME

Omega OU-02

DATE COMPLETED 12/13/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELI	L DIAGRAM
3.7		30	CORE					Trace medium to coarse subrounded gravel at 31, 39, and 43 feet bgs. No significant change observed in the lithology from 32 to 46 feet bgs. (continued)			
1.7		30	CORE	H	-40-	SP					−#3 Monterey
		30	CORE	H							Sand Sch. 40 PV0 0.020-inch Slotted Well Screen (37.
1.4		30	CORE	H	-45- 	SP- SW	; D	Color change to yellowish brown (10 YR 5/4) poorly sorted SAND, increase in coarse sand and subrounded gravel, wet, no odor	45.0		47.5 feet bg
1.2							13.	Bottom of borehole at 47.5 feet.	47.5		



### **WELL NUMBER MW07A**

PAGE 1 OF 2

PROD LOCA DRIL SAMI GRO	JECT NI JECT N. ATION LING M PLING M UND EL OF CAS	AME WH ETHO METHO EVAT	Ome	ega ( A ollov Cont	OU-02 w Stem tinuous 3.94	Auge 30-in	er, 10-ind ch Split	DATE STARTED 12/11/01  DATE COMPLETED 12/12/01  CASING TYPE/DIAMETER Sch. 40 PVC / 4-inch  ach Diamter SCREEN TYPE/SLOT Sch. 40 PVC / 0.020-inch  t Spoon GRAVEL PACK TYPE #3 Monterey Sand/8 cu. ft.  GROUT TYPE/QUANTITY Portland/5% Bentonite / 140 gal.  DEPTH TO WATER 20.8
1.302.12	GED BY ARKS	_I	Mehal	_				GROUND WATER ELEVATION 123.2
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION  LITHOLOGIC DESCRIPTION  WELL DIAGRAM
		60	AUGE	R	 	ML		Asphalt Dark yellowish brown (10YR 4/6), sandy SILT, 15% fine sand and 85% silt, moist, soft, no odor.  Traffic-rate Vault Rapid-set Concrete
		30	CORE	Ì	-5-	CL		Very dark gray (10YR 3/1), CLAY, low to medium plasticity, moist, soft, no odor.
		30	CORE			CL		Dark yellowish brown (10YR3/4), sandy CLAY, 25% fine sand and 75% clay, low to medium plasticity, moist, firm, no odor.
0.2		0 24	NR CORE	П	-10- 			Very dark gray (10YR 3/1), CLAY, medium plasticity, slightly moist, firm, no odor. Color change at 13 feet bgs
0.2		30	CORE	H	 - -15	CL		to dark yellowish brown (10YR 3/4). Trace cementation at 19.8 feet below ground surface (bgs).  Portland Cement Gr with 5%
		30	CORE					Bentonite  → Sch. 40 PV
0.4		30	CORE		-20-			□ Blank Casi
		30	CORE		}	sc  sc		Dark yellowish brown (10YR 4/4), clayey SAND, 70% fine to medium sand and 30% clay, low plasticity, moist, soft, no odor. Trace fine gravel at 21 feet bgs.  Yellowish brown (10YR 5/4), SAND with clay 85% fine to
		0	NR		-25-	ML		medium sand and 15% clay, wet, soft, no odor.  Silty sand in slough. Yellowish brown (10YR 5/4), SILT, trace of fine sand, moist to wet, soft, no odor.
0.0		15	CORE	Ĭ	+	SM		Yellowish brown (10YR 5/4), silty SAND, 85% fine to medium sand and 15% silt, moist, soft, no odor. Increase grain size from medium to coarse at 28 feet bgs.
0.0		0 0		- 0	-30-	ML		Very dark grayish brown (10YR 3/2), SILT with sand, 15% fine sand and 85% silt, soft, no odor. Increase sand at 30.5 feet bgs.
0.0			CORE	-	1	sw		Light brownish gray (10YR 6/2), SAND, 25% fine, 40% medium and 35% coarse grained sand, well graded, wet, no odor. 2-inch layer of SILT at 31.5 feet bgs; increased coarse sand below silt, color change at 32.3 feet bgs to yellowish brown (10YR 5/6)
				-	-	SP		Yellowish-brown medium SAND, poorly graded, wet, no odor.

### WELL NUMBER MW07A PAGE 2 OF 2

PROJECT NUMBER 20074.515.009.0321 PROJECT NAME

Omega OU-02

DATE STARTED 12/11/01

DATE COMPLETED 12/12/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
0.0		0	NR CORE NR CORE	0		SP		Yellowish-brown medium SAND, poorly graded, wet, no odor. (continued)  Yellowish brown (10YR 5/6), SAND, predominantly subrounded and medium grained, wet, poorly sorted, no odor. Large gravel in sluff at 41 feet bgs.	36.5	#3 Monterey Sand
0.0		0	NR CORE NR CORE	0	40  	SP				Sch. 40 PVC 0.020-inch Slotted Well Screen (35.8 46 feet bgs)
0.0 NM			CORE		45	SW		Light brownish gray (10YR 6/2), SAND with gravel, 25% fine sand, 40% medium sand and 35% coarse sand, subangular fine to coarse gravel, well graded, wet, no odor.  Bottom of borehole at 46.0 feet.	45.0 _46.0	

## WASTEN.

#### **WELL NUMBER MW08A**

PAGE 1 OF 2

PROJ LOCA DRILL SAME GROU TOP ( LOGO	ECT NATION LING M PLING M JND EL OF CAS	Whi ETHOD METHOD EVATION ING	D C	llow onti	OU-02 / Stem inuous .47	Auger 5-foot	r, 10-inc Core	DATE STARTED 12/17/01  DATE COMPLETED 12/17/01  CASING TYPE/DIAMETER Sch. 40 PVC / 4-inch  SCREEN TYPE/SLOT Sch. 40 PVC / 0.020-inch  GRAVEL PACK TYPE #3 Monterey Sand/8 cu. ft.  GROUT TYPE/QUANTITY Portland/5% Bentonite / 100 gal.  DEPTH TO WATER 26.3  GROUND WATER ELEVATION 124.2
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION  LITHOLOGIC DESCRIPTION  WELL DIAGRAM
0.0		60	AUGEF			ML ML		Landscaped lawn Very dark grayish brown (10YR 3/2), SILT with some clay and trace sand, micaceous.  Black (7.5YR 2.5/1), SILT with clay and fine sand, micaceous. Color change at 7 feet below ground surface (bgs) to brown (10YR 4/3).
0.0		60	CORE		-10-	ML		Dark brown (7.5YR 3/3), SILT with some clay and trace fine sand, 5% sand and 90% fines, root casts, no odor.  Portland Cement Growith 5%
0.0		60	CORE		-15- -15- -	0		Very dark grayish brown (10YR 3/2), CLAY wih silt, moist, no odor, rootlets. Trace sand and some oxidation at 18.5 feet bgs.  Bentonite  Sch. 40 PV  Blank Casin
0.0		60	CORE		-20-	CL		
0.0		60	CORE		-25-	ML		Dark yellowish brown (10YR 3/4), SILT with fine sand and clay, 15% sand and 85% fines, moist, some oxidation. Color change at 23.5 feet bgs to dark brown (7.5YR 3/4) and increase in fine sand content, micaceous, wet at 27 feet bgs.
0.0		0 36	NR ( CORE		-30-	SP- SW		Dark yellowish brown (10YR 3/6), fine to medium and fine to coarse SAND with trace to little silt, poorly to moderately sorted, wet.      29.0
					1			34.5

### WELL NUMBER MW08A

PROJECT NUMBER \_ PROJECT NAME

20074.515.009.0321

Omega OU-02

DATE STARTED 12/17/01

DATE COMPLETED 12/17/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WEL	L DIAGRAM
		0	NR	0	-	SM		Brown (10YR 4/3), silty fine to medium SAND, wet, no odor, slightly cemented. (continued)	37.0		-#3 Monterey
0.0		36	CORE			sw		Dark yellowish brown (10YR 3/4), fine to coarse SAND, trace silt, trace subrounded to subangular 1/2-inch gravel, wet.	38.5		Sch. 40 PV6 0.020-inch Slotted Well
		0	NR		-40- 	SM		Dark yellowish brown (10YR 4/4), silty fine SAND, trace subangular gravel, 1/4-inch gravel clasts, wet, slightly cemented.			Screen (30 45 feet bgs)
0.0		30	CORE			SW- SP		Olive brown (2.5Y 4/4), fine to coarse SAND, trace to little silt, poorly sorted, trace 1/2 to 1-inch subrounded gravel. Color change at 44 feet bgs to dark yellowish brown	42.5		
0.0				Ц	-45-		1000	(10YR 3/6); finer sands toward bottom.  Bottom of borehole at 45.0 feet.	45.0		
								==			
									ē		



## WELL NUMBER MW08B/MW08C PAGE 1 OF 3

PROD LOCA DRIL SAMI GRO TOP LOGO	JECT NATION LING MI PLING M UND EL OF CAS GED BY	AME Wh ETHO METHO EVAT	OD _ C TON _ 150.1 \. Cohar	ga C A ollow Conti 150	v Stem inuous 0.35-MV MW08E	Auge 5-foot V08B 3; 150	r, 10-in t Core and MV	DATE STARTED 12/26/01  DATE COMPLETED 12/26/01  CASING TYPE/DIAMETER Sch. 40 PVC / 2-inch  Ch Diamter  SCREEN TYPE/SLOT Sch. 40 PVC / 0.020-inch  GRAVEL PACK TYPE #3 Monterey Sand/8 cu. ft.  W08C GROUT TYPE/QUANTITY Portland/5% Bentonite / 210 gal.  W08C DEPTH TO WATER 26.8  GROUND WATER ELEVATION
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION  LITHOLOGIC DESCRIPTION  WELL DIAGRAM
		60	AUGEF			ML		Landscaped lawn
0.0		60	CORE		- 5 -	ML		Vault Rapid-set Concrete  Black (7.5YR 2.5/1), SILT with clay and fine sand, micaceous.  Black (7.5YR 2.5/1), SILT with clay and fine sand, micaceous. Color change at 7 feet below ground surface (bgs) to brown (10YR 4/3).  Dark brown (7.5YR 3/3), SILT with some clay and trace fine sand, 5% sand and 90% fines, root casts, no odor.  Very dark grayish brown (10YR 3/2), CLAY wih silt, moist, no odor, rootlets. Trace sand and some oxidation at 18.5 feet bgs.
0.0		60	CORE	-	-10-	ML		Dark brown (7.5YR 3/3), SILT with some clay and trace fine sand, 5% sand and 90% fines, root casts, no odor.
0.0		60	CORE	-	-15-	CL		Very dark grayish brown (10YR 3/2), CLAY wih silt, moist, no odor, rootlets. Trace sand and some oxidation at 18.5 feet bgs.
0.0		60	CORE	-	-20-			22.0
0.0		60	CORE		-25-	ML		Dark yellowish brown (10YR 3/4), SILT with fine sand and clay, 15% sand and 85% fines, moist, some oxidation. Color change at 23.5 feet bgs to dark brown (7.5YR 3/4) and increase in fine sand content, micaceous, wet at 27 feet bgs.
0.0		0 36	NR C CORE	- - - -		SP- SW		Dark yellowish brown (10YR 3/6), fine to medium and fine to coarse SAND with trace to little silt, poorly to moderately sorted, wet.    29.0  Portland Cement Grouw 15% Bentonite
				E	1			34.5

### WELL NUMBER MW08B/MW08C PAGE 2 OF 3

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/26/01

PROJECT NAME

Omega OU-02

12/26/01 DATE COMPLETED

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WE	LL DIAGRAM
		0	NR	0		SM		Brown (10YR 4/3), silty fine to medium SAND, wet, no odor, slightly cemented. (continued)	37.0		
0.0		36	CORE	П	-	sw		Dark yellowish brown (10YR 3/4), fine to coarse SAND, trace silt, trace subrounded to subangular 1/2-inch gravel, wet.	38.5		
		0	NR	0	 -40- 	SM		Dark yellowish brown (10YR 4/4), silty fine SAND, trace subangular gravel, 1/4-inch gravel clasts, wet, slightly cemented.			
0.0			CORE		  45			Olive brown (2.5Y 4/4), fine to coarse SAND, trace to little silt, poorly sorted, trace 1/2 to 1-inch subrounded gravel. Color change at 44 feet bgs to dark yellowish brown (10YR 3/6); finer sands toward bottom.	42.5		Sch. 40 PV0 Blank Casin
0.0		0	NR	0		SW- SP					
		0	NR	0	50- 		2 .C	Olive brown (2.5Y 4/3), SAND, fine to coarse grained, moist, moderately sorted, soft, grades into more gravel and coarser sand towards lower portion of sample.	50.0		
		0	NR	0	  -55-	sw					
		24	CORE	n			ь () Э				
		0	NR	0	60 	ML	<u>;:0:</u>	Olive brown (2.5 Y 4/4), clayey SILT with some sand, trace subrounded 1/2-1.5-inch gravel, medium plasticity, wet, medium stiff, slightly micaceous.	_59.5	Ш	-Bentonite Pellets
NM		24	CORE		  -65-	SP- SM		Olive brown (2.5Y 4/3), fine to medium SAND with trace of silt, moderate to well sorted, wet, soft. Silty sand at 65 feet bgs.	63.0		#3 Monterey
			INIX	0		SM					
0.9		18	CORE		 - 70-			Olive brown (2.5Y 4/3), SAND, fine to medium grained, wet, moderate to well sorted, soft, slightly micaceous. Increase in silt content at 73 feet bgs; well sorted.	68.5		Sch. 40 PV
		0	NR	0		SP		340000 30 0000 30 000000	73.0		0.020-inch Slotted Well Screen (65 t 75 feet bgs)
8.0		24	CORE	П		SM			, 5.5		



PAGE 3 OF 3

PROJECT NUMBER 20074.515.009.0321 DATE STARTED 12/26/01 Omega OU-02 DATE COMPLETED 12/26/01 PROJECT NAME Continued from Previous Page RECOVERY (inches) GRAPHIC LOG CONTACT SAMPLE ID. PID (ppm) BLOW U.S.C.S. DEPTH (ft. BGL) EXTENT LITHOLOGIC DESCRIPTION WELL DIAGRAM NR 0 SM 76.0 Olive gray (5Y 4/2), clayey SILT, little subrounded 1/4-1/2-inch gravel, wet, medium stiff, micaceous. Color CORE 0.9 48 change at 79 feet bgs to dark yellowish brown (10YR 4/4), with increase in fine sand. ML Bentonite 80 Pellets NR 0 82.5 Olive brown (2.5Y 4/4), SAND with some silt, fine to medium grained sand, moderate to well sorting, wet, soft, CORE 0.8 30 SP 83.5 micaceous. Dark yellowish brown (10YR 4/4), clayey SILT, wet, medium stiff, micaceous. Grades into a very fine sandy 0 NR SILT at 84 feet bgs with trace clay, medium soft. ML #3 Monterey Sand 89.0 Sch. 40 PVC Dark olive brown (2.5Y 3/3), silty fine SAND with some 0.7 12 CORE 0.02-in Slotted clay, wet, soft to medium soft, micaceous. 90 Well Screen 0 NR SM (86.7 to 91.7 feet bgs) #3 Monterey 93.0 Sand Bottom of borehole at 93.0 feet. BORINGAMELL CONSTRUCTION LOG OMEGA WELL LOGS GPJ RFW SHERMAN OAKS GDT 1/22/03

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### WELL NUMBER MW08D PAGE 1 OF 4

PROD LOCA DRILL SAME GROU TOP ( LOGO	JECT N. ATION LING M PLING M UND EL OF CAS GED BY	White White ETHOD METHODE EVATION EVATION B.	Omeg ttier, CA  Mu  Co  Co  150.02	d Rota continuo 50.17	ry, 8-inch ous 5-foo	n Diame t Core	DATE STARTED 12/19/01  DATE COMPLETED 12/19/01  CASING TYPE/DIAMETER Sch. 40 PVC / 4-inch  eter SCREEN TYPE/SLOT Sch. 40 PVC / 0.020-inch  GRAVEL PACK TYPE #3 Monterey Sand/8 cu. ft.  GROUT TYPE/QUANTITY Portland/5% Bentonite / 165 g  DEPTH TO WATER 30.1  GROUND WATER ELEVATION 120.1	ıal.
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	DEPTH	(ft. BGL)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION  LITHOLOGIC DESCRIPTION  WELL	DIAGRAM
		540 /	AUGER		- ML		Very dark grayish brown (10YR 3/2), SILT with some clay and trace sand, micaceous.	Traffic-rate Vault Rapid-set Concrete
				- 5 - -		*******	Black (7.5YR 2.5/1), SILT with clay and fine sand, micaceous. Color change at 7 feet below ground surface (bgs) to brown (10YR 4/3).	
				-10 -	 ML		Dark brown (7.5YR 3/3), SILT with some clay and trace fine sand, 5% sand and 90% fines, root casts, no odor.	
				- -15 - -	- CL		Very dark grayish brown (10YR 3/2), CLAY wih silt, moist, no odor, rootlets. Trace sand and some oxidation at 18.5 feet bgs.	
				-20·	-		Dark yellowish brown (10YR 3/4), SILT with fine sand and	
				- 25- -	ML		clay, 15% sand and 85% fines, moist, some oxidation. Color change at 23.5 feet bgs to dark brown (7.5YR 3/4) and increase in fine sand content, micaceous, wet at 27 feet bgs.	
				- - -30-	SP- SW		Dark yellowish brown (10YR 3/6), fine to medium and fine to coarse SAND with trace to little silt, poorly to moderately sorted, wet.	
							34.5	

#### **WELL NUMBER MW08D**

PAGE 2 OF 4

PROJECT NAME Omega OU-02

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/19/01

DATE COMPLETED 12/19/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WE	LL DIAGRAM
					., .	SM		Brown (10YR 4/3), silty fine to medium SAND, wet, no odor, slightly cemented. (continued)	37.0		
						sw		Dark yellowish brown (10YR 3/4), fine to coarse SAND, trace silt, trace subrounded to subangular 1/2-inch gravel, wet.	38.5		
				1	- -40-	SM		Dark yellowish brown (10YR 4/4), silty fine SAND, trace subangular gravel, 1/4-inch gravel clasts, wet, slightly cemented.			
0.0		0	NR		  45	SW- SP		Olive brown (2.5Y 4/4), fine to coarse SAND, trace to little silt, poorly sorted, trace 1/2 to 1-inch subrounded gravel. Color change at 44 feet bgs to dark yellowish brown (10YR 3/6); finer sands toward bottom.	_42.5		
				0					49.0		
AINE	V 1		CORE			GP	200	Medium to coarse sandy subangular 2-inch GRAVEL.	50.0		8
NM		6 0	CORE NR	0	50  		\$ 0 \$ 0	Olive brown (2.5Y 4/4), SAND with trace silt and some subangular 1/2-1-inch gravel, medium to coarse grained sand, wet. Color change at 54.5 feet bgs to strong brown (7.5YR 4/6).			Portland Cement Gro with 5%
NM		12	CORE	П	-	SP- SW	• 0				Bentonite
		0	NR	0	-55-  	, O				Sch. 40 PV Blank Casir	
		18	CORE	п				Dark yellowish brown (10YR 4/4), clayey SILT with a trace	58.5		
		0	NR	Ш	-60-	ML _GP_		of fine sand and some subrounded 1/2-1-inch gravel, slightly plastic, wet, medium stiff.	59.5 60.0		
NM		42	CORE	0		ML		Sandy GRAVEL, subrounded, 1/4-1/2-inch.  Brown (7.5YR 4/4), clayey SILT, wet, stiff, micaceous. Increase in sand content towards lower portion of sample.			
				Ш	-			Olive gray to olive (5Y 4/2 to 5Y 5/3), silty fine SAND, wet,	63.0		
				П	+ +	SM		stiff, micaceous.	64.5		
		0	NR	0	65- 	SP		Olive gray (5Y 5/2), SAND, fine to medium grained, some silt, wet. Some subrounded 1/2-1-inch gravel and a color change to olive brown (2.5Y 4/4) at 68 feet.			
									68.0		
		1			_		7.7		69.0		
		12	CORE	0	-70-			Dark yellowish gray (10YR 4/4), fine sandy SILT, wet, stiff, micaceous.			
NM		54	CORE			ML		Increase in clay content, carbonate patches and partially cemeted.	72.0		



#### **WELL NUMBER MW08D**

PAGE 3 OF 4

 PROJECT NUMBER
 20074.515.009.0321
 DATE STARTED
 12/19/01

 PROJECT NAME
 Omega OU-02
 DATE COMPLETED
 12/19/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELI	_ DIAGRAM
		0 12 0	ORE NR			ML		Increase in clay content, carbonate patches and partially cemeted. (continued)  Color change by 79 feet bgs to light brown (2.5Y 4/3). Color changes back to dark yellowish brown (10YR 4/4) at 79.5 feet bgs.	79.0		
MM		12 0	CORE NR		 - 85-	ML		Fine sandy SILT as above. Color change to dark olive brown (2.5Y 3/3), medium soft.	84.0		
NM		36 60	CORE		  -90-	SP		Very dark grayish brown (2.5Y 3/2), SAND, fine to medium, little silt, trace gravel, wet, soft.	87.0		
NM		60	CORE		  -95-	CL- ML		Dark yellowish brown (10YR 3/4), silty CLAY, wet, stiff, moderately cemented, micaceous. Color changes to dark brown (7.5YR 3/3) at 95.5 feet bgs and is partially cemented.	93.0		
νM		60	CORI	111	  -100-	ML		Dark brown (7.5YR 3/3), fine sandy SILT, wet, medium stiff, partially cemented, micaceous.  Silty fine SAND, medium soft, wet, micaceous	101.0		
NM		60	CORI	Ш	 105-	SP		Brown (10YR 4/3), SAND, fine to medium, trace silt, wet, medium soft, micaceous. Grading into fine to very fine sand at 106 feet bgs.	103.5		– Bentonite Pellets
NM		60	COR	Ш	- - -110- -	CL- ML		Brown (10YR 4/3), silty CLAY, medium stiff, partially cemented, micaceous.  Dark yellowish brown (10YR 3/6) to dark olive gray (5Y 3/2), SAND, fine grained, trace silt, wet, micaceous, odor.	108.0		-#3 Monter Sand -Sch. 40 P 0.020-inch Slotted W

### WELL NUMBER MW08D PAGE 4 OF 4

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/19/01

PROJECT NAME Omega OU-02

DATE COMPLETED 12/19/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
		0 54	NR CORE	0		SP		Dark olive gray (5Y 3/2), SAND, fine grained, trace silt, wet, soft, micaceous, odor. At 122 feet bgs some medium grained sands and some subrounded 1/4-1/2-inch gravel.	115.5	Sch. 40 PVC 0.020-inch
MM		60	CORE		 120 		٥		122.0 122.5	Slotted Well Screen (110 120 feet bgs #3 Monterey Sand
NM		60	CORE		  -125  	CL.		Small lens of CLAY, wet, medium soft.  Dark olive gray (5Y 3/2), SAND as seen above. Dark yellowish brown (10YR 4/6) oxidized layer at 125 feet bgs.  Trace of subrounded 1/4-1/2-inch gravel at 126.5 feet bgs.	122.7	
NM		60	CORE		 130-  	SP				
ММ		60	CORE		135 					Bentonite C Backfill
		0 54	NR CORE	0	-140 -		ъ.У.	Fine to coarse SAND, some gravel	141.0	
NM		60	CORE		- - - -145-	SW	); (); ()	Clayey SILT, cemented, with subrounded 1/8-1/4-inch gravel layer. SAND, fine to medium grained, some gravel, wet, soft.	143.5	
IAIN			JONE			SP		Some coarse sand at approximately 147 bgs.	149.0	
					150	ML		Fine sandy SILT, wet, medium soft.  Bottom of borehole at 150.0 feet.	150.0	



## WELL NUMBER MW09A PAGE 1 OF 3

PROD LOCA DRILI SAME GROU TOP (	JECT NATION LING MI PLING M UND EL OF CAS	METHOD EVATION INGA. C Litholo	Omega ( er, CA Hollov Cont N 149 149.37	oU-02 w Stem tinuous 9.51	Auge 5-fool	r, 10-inc	DATE STARTED 12/28/01  DATE COMPLETED 12/28/01  CASING TYPE/DIAMETER Sch. 40  GRAVEL PACK TYPE #3 Mont  GROUT TYPE/QUANTITY Port  DEPTH TO WATER 24.9  GROUND WATER ELEVATION  Geet below ground surface from MW09B	PVC / erey S land/5	0.020 Sand/8 % Ber	-inch cu. ft. ntonite /	
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID. EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION		CONTACT	v	/ELL DIAGRAM
		Ā	UGER	  - 5 -	ML		Landscaped lawn Dark yellowish brown (10YR 4/4), SILT, soft, moist, no odor.	<i></i>	0.2		Traffic-rated Vault Rapid-set Concrete
				  -10 	CL		Brown (10YR 4/3), fine sandy CLAY, 20% fine sand and 80% clay, medium plasticity, moist, soft, no odor, roots present. Color change at 12 feet below ground surface (bgs) to dark reddish brown (5YR 4/3), and trace cementation at 13 feet bgs.		8.3	-	Portland Cement Gro with 5% Bentonite
				-15-   	ML		Dark reddish brown (5YR 4/3), fine sandy SILT, 15% fine sand and 85% silt, slightly moist, soft, no odor. At 16 feet bgs, color changes to grayish brown (10YR 5/2), increase consistency to firm, and decrease in moisture. At 18 feet bgs, increase in moisture, decrease consistency to soft, and slight black discoloration from 19.5 to 20 feet bgs.		14.5		Blank
				1	SM		Dark yellowish brown (10YR 4/4), silty SAND, 25% silt and 75% fine sand, slightly moist, soft, no odor.	0	1.0		— Bentonite Ch
				-	ML		Dark reddish brown (10YR 4/3) sandy SILT, 15% fine sand, 85% silt, soft slightly moist, no oder.		2.5 3.5	A. N.	
				-25-	SP		Yellowish brown (10YR 5/6), SAND, fine to medium grained, subrounded, poorly sorted, slightly moist, no odor. At 25.5 feet bgs, color change to grayish brown (10YR 5/2) and increase in moisture.	Ţ			
				-30-	ML		Brown (10YR 4/3), fine sandy SILT, 15% fine sand and 85% silt, wet, soft, no odor.	∑ 29	9.0		#3 Monterey Sand Sch. 40 PVC 0.020-inch Slotted Well
			-	-	SM :		Dark grayish brown (10YR 4/2), silty SAND, 20% silt and 80% fine sand, wet, soft, no odor.  Dark grayish brown (10YR 4/2), sandy SILT to silty SAND, 50% silt and 50% fine sand, moist to wet, firm, no odor.	32	2.5		Screen (25 to 35 feet bgs)

## WELL NUMBER MW09A PAGE 2 OF 3

PROJECT NAME Omega OU-02

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/28/01

DATE COMPLETED 12/28/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
				1	,	ML- SM		Dark grayish brown (10YR 4/2), sandy SILT to silty SAND, 50% silt and 50% fine sand, moist to wet, firm, no odor. (continued)	38.0	
				l	  -40-	ML		At 38 feet bgs, cementation and decrease in moisture content		
					   -45-	ML		At 41 feet bgs, trace cementation, increase consistency to hard, increase clay content and color change to light brownish gray (10YR 6/2).	41.0	
				1		sc		Dark yellowish brown (10YR 4/6), clayey SAND, 40% clay and silt and 60% fine sand, low plasticity, moist, no odor.	46.0	
					 50 	CL		Yellowish brown (10YR 5/4), sandy CLAY, 40% clay, 60% fine sand, medium plasticity, moist, hard, no odor, trace cementation. 1/4-inch fine sand lense at 48.5 feet bgs.	53.0	
					 - 55-  	SP		Grayish brown (10YR 5/2), SAND, poorly graded, predominantly medium grained, wet, soft, no odor. At 55.5 feet bgs, decrease in grain size to predominantly fine.	53.0	
					- 60-				61.0	
		0	NR		  - 65-	CL		Dark grayish brown (10YR 4/2), sandy CLAY, 20% sand and 80% clay, medium plastic, moist to wet, no odor.		Bentonite Pellets Back
		24	CORE		  	SP- SM		Olive brown (2.5Y 4/3), silty SAND, fine to medium, some clay, 75% sand and 25% fines, wet, poorly sorted, soft, micaceous.	68.0	
1.2		48	CORE	Ĭ		CL- ML		Dark yellowish brown (10YR 4/4), silty CLAY, low to medium plasticity, wet, medium stiff, micaceous.	_71.0	



#### **WELL NUMBER MW09A**

PAGE 3 OF 3

PROJECT NUMBER 20074.515.009.0321 DATE STARTED 12/28/01 PROJECT NAME Omega OU-02 DATE COMPLETED 12/28/01 Continued from Previous Page RECOVERY (inches) SAMPLE ID. BLOW GRAPHIC LOG PID (ppm) CONTACT DEPTH (ft. BGL) EXTENT U.S.C.S. LITHOLOGIC DESCRIPTION WELL DIAGRAM Light olive brown (2.5Y 5/4), CLAY. Similar to above, but less silt and some oxidation. Non-recovery indicates 0 NR possible sand. (continued) CL -80 0 NR 81.5 NM Olive brown (2.5Y 4/4), silty CLAY, similar to 71 to 74.5 42 CORE feet bgs. ML 83.5 83.6 ML Olive brown (2.5Y 4/4), fine sandy SILT, wet, soft, very Olive brown (2.5Y 4/3), SAND, fine to medium, wet, moderately sorted, soft. 85 NR 0 SP 90.0 Bottom of borehole at 90.0 feet. BORING/WELL CONSTRUCTION LOG OMEGA WELL LOGS GPJ RFW SHERMAN OAKS GDT 1/22/03



## WELL NUMBER MW09B PAGE 1 OF 2

PRO.		AME Wh ETHO	Omnittier, C	ega ( CA Hollov	OU-02 w Stem	Auge	r, 10-inc	DATE STARTED 12/14/01  DATE COMPLETED 12/14/01  CASING TYPE/DIAMETER Sch. 40 PV		
	PLING N				The second	5-foo	t Core	GRAVEL PACK TYPE #3 Montere		
	UND EL OF CAS			_				GROUT TYPE/QUANTITY Portland		
	GED BY			,				DEPTH TO WATER		
	ARKS		. WETTA					GROUND WATER ELEVATION 12	1.9	
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
		60	AUGE	R		_	1177	Landscaped lawn	0.2	Traffic-rate
0.0		60	CORI			ML		Dark yellowish brown (10YR 4/4), SILT, soft, moist, no odor.		Vault Rapid-set Concrete
0.0		60	CORE		 -10- 	CL		Brown (10YR 4/3), fine sandy CLAY, 20% fine sand and 80% clay, medium plasticity, moist, soft, no odor, roots present. Color change at 12 feet below ground surface (bgs) to dark reddish brown (5YR 4/3), and trace cementation at 13 feet bgs.	8.3	
0.0		60	CORE		-15-  	ML		Dark reddish brown (5YR 4/3), fine sandy SILT, 15% fine sand and 85% silt, slightly moist, soft, no odor. At 16 feet bgs, color changes to grayish brown (10YR 5/2), increase consistency to firm, and decrease in moisture. At 18 feet bgs, increase in moisture, decrease consistency to soft, and slight black discoloration from 19.5 to 20 feet bgs.	14.5	
		0	NR		-20-					
0.0		48	CORE	H	+			Dark vellowich brown (10VP (14)	21.0	
SCA II			1 3	11	-	SM		Dark yellowish brown (10YR 4/4), silty SAND, 25% silt and 75% fine sand, slightly moist, soft, no odor.	22.5	
				IF	-	ML		Dark reddish brown (10YR 4/3) sandy SILT, 15% fine sand, 85% silt, soft, slightly moist, no odor.	23.5	Portland
		0	NR		-25-	SP		Yellowish brown (10YR 5/6), SAND, fine to medium grained, subrounded, poorly sorted, slightly moist, no odor. At 25.5 feet bgs, color change to grayish brown (10YR 5/2) and increase in moisture.	25.5	Cement Grouwith 5% Bentonite Sch. 40 PVC Blank Casing
0.0		30	CORE	П	1			Ţ		
				H			-1-1	У 	29.0	
		0	NR	0	-30-	ML		Brown (10YR 4/3), fine sandy SILT, 15% fine sand and 85% silt, wet, soft, no odor.	-3.0	
0.0		30	CORE	П	].	CNA		Park gravish brown (10VP 4/2)	32.5	
100					-	SM ML-	計.	Dark grayish brown (10YR 4/2), silty SAND, 20% silt and 80% fine sand, wet, soft, no odor.	33.5	
			<u> </u>			SM		Dark grayish brown (10YR 4/2), sandy SILT to silty SAND, 50% silt and 50% fine sand, moist to wet, firm, no odor.		



## WELL NUMBER MW09E PAGE 2 OF 2

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/14/01

PROJECT NAME

Omega OU-02

DATE COMPLETED 12/14/01

Continued from Previous Page

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIA	AGRAM
0.0		60	CORE			ML- SM		Dark grayish brown (10YR 4/2), sandy SILT to silty SAND, 50% silt and 50% fine sand, moist to wet, firm, no odor. (continued)	38.0		
NM		60	CORE		- -40-	ML		At 38 feet bgs, cementation and decrease in moisture content	41.0		
					15_	ML		At 41 feet bgs, trace cementation, increase consistency to hard, increase clay content and color change to light brownish gray (10YR 6/2).	7		
NM		60	CORE		-45- 	sc		Dark yellowish brown (10YR 4/6), clayey SAND, 40% clay and silt and 60% fine sand, low plasticity, moist, no odor.	46.0	-Ber Pel	ntonite llets
		0	NR	0	  -50-	CL		Yellowish brown (10YR 5/4), sandy CLAY, 40% clay, 60% fine sand, medium plasticity, moist, hard, no odor, trace cementation. 1/4-inch fine sand lense at 48.5 feet bgs.	48.0		
NM		36	CORE	П					53.0		
		0	NR		 - 55 	SP	<i>(1111)</i>	Grayish brown (10YR 5/2), SAND, poorly graded, predominantly medium grained, wet, soft, no odor. At 55.5 feet bgs, decrease in grain size to predominantly fine.	_ 53.0	San Sch 0.02 Sloti	n. 40 PV 20-inch tted Wel een (49.
		18	CORE	-						60 1	feet bgs)
NM			CORE	Ш	-60-						
Nivi		00				CL		Dark grayish brown (10YR 4/2), sandy CLAY, 20% sand and 80% clay, medium plastic, moist to wet, no odor.	61.0		
0.0				1	-65-·			Bottom of borehole at 65.0 feet.	65.0		
J.0								Bottom of borehole at 65.0 feet.			



#### **WELL NUMBER MW10A**

PAGE 1 OF 2

	JECT N						21		DATE STARTED12/18/01		
PRO.	JECT N	AME	_Ome	ga C	U-02				DATE COMPLETED 12/18/01		
	ATION			_						40 PVC /	4-inch
DRIL	LING M	ETHO	D H	ollow	Stem	Augei	, 10-inc	h Diamter	SCREEN TYPE/SLOT Sch. 40 P		
	PLING N								GRAVEL PACK TYPE #3 Monte		
GRO	UND EL	EVAT	ION _	147.	.82						
TOP	OF CAS	SING	147.7	1							monite / 100 gai.
LOG	GED BY	A	. Cohai							116.5	
	ARKS									110.0	
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHO	LOGIC DESCRIPTION	ACT	
PIO	II OS	REC(inc	SAME	EX	(ft.	U.S	GRA	Linio	EGGIC DEGCKIFTION	CONTACT	WELL DIAGRAM
0		60	AUGE	R			22222	Asphalt		0.4	Traffic-rated
0.0		0 48	NR CORE		  - 5 <del>-</del>	CL- ML		Very dark brown (10) micaceous.	'R 2/2), silty CLAY, roots,		Vault Rapid-set Concrete
				l	-	ML		Dark yellowish brown sand and 80% fines,	(10YR 3/4), fine sandy SILT, 20% slightly cemented, roots.	8.0	
0.0		60	CORE	H	-10-			Dork well-wish burner	WANTED THE THE	10.0	
					-	SM ML		<ul> <li>sand and 20% fines.</li> </ul>	(10YR 4/4), silty fine SAND, 80% moist, very micaceous. (10YR 3/4), fine sandy SILT, similar ight cementation.	11.0	
		0	NR		-15-	ML		Dark yellowish brown medium sand and sor micaceous.	(10YR 4/4), SILT with fine to ne clay, 15% sand and 85% fines,	14.0	
0.0			0005		-					1	
0.0		0	NR		-20-			sand and 9% fines, fir trace 1.5 inch subrour feet bgs, increase in g 1-inch, trace silt. At 2	(10YR 3/4), SAND, 1% gravel, 90% le to medium grained, poorly sorted, ided gravel, moist, no odor. At 23 gravel content; subrounded 1/2 to 8 feet bgs, increase in sand grain	18.4	
				_	-			size from medium to o	coarse.		
0.0		30	CORE	H	-	SP					
		0	NR		-25-						Portland Cement Grout with 5% Bentonite
0.0		24	CORE							28.0	Sch. 40 PVC Blank Casing
		0	NR		-30-	SP					
0.0		18	CORE		-	sw	; :: [- :: [-			∑ 33.5	



## WELL NUMBER MW10A PAGE 2 OF 2

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/18/01

PROJECT NAME Omega OU-02

DATE COMPLETED 12/18/01

Continued from Previous Page

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLEID	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WE	LL DIAGRAM
0.0		0	NR	0		sw	ο. Ο. Σ. Ο.	Dark brown (10YR 3/3), gravelly SAND, subrounded 1/2 to 2-inch clasts, fine to coarse grained sand, trace silt, wet, no odor. (continued)	37.5		
0.0		0	NR	0	 -40- 	SP		Very dark grayish brown to dark olive brown (2.5Y 3/2 to 2.5Y 3/3), SAND with trace to some silt, trace subangular 1/2 to 1 inch gravel,1% gravel, 4% fines and 95% sand, fine to medium grained sand, moderately sorted, wet, no odor, micaceous.			
0.0		24	CORE	П					43.0		
		0	NR	0	-45-	SP- SM					
0.0		24	CORE		- 1			Padd down are	48.5		-Bentonite Pellets
		0	NR	0	-50 -	sw		Dark brown (10YR 3/3), gravely SAND, 1/8 to 1 inch subrounded gravel, 10% gravel, 85% sand and 5% fines, poorly sorted, wet, no odor, micaceous. Few small lenses of strong brown (7.5YR 4/6), SILT.			
0.0		36	CORE			CL- ML		Dark yellowish brown (10YR 4/4), silty CLAY with trace gravel, 3% gravel, 2% sand, and 95% fines, wet, slightly cemented, micaceous.	52.0		
0.0		0 54	NR CORE	0	-55-	sw	aww.	Olive brown (2.5Y 4/3), SAND, fine to coarse grains, trace silt, 5% fines and 95% sand, poorly sorted, wet, no odor, micaceous. At 57.5 feet bgs, some subrounded 1/4 to 1/2 inch-gravel.	54.0		-#3 Montere Sand -Sch. 40 PV 0.020-inch
		0	NR	0-	-60-	SM		Dark yellowish brown (10YR 4/4), silty SAND, trace clay.	59.0		Slotted We Screen (52 62 feet bgs
0.0		36	CORE	F	-	CL- ML		Dark yellowish brown (10YR 3/6), silty CLAY, some oxidation, micaceous.	62.0		
0.0				1	-65			Bottom of borehole at 65.0 feet.	65.0		

## WESTERN.

#### **WELL NUMBER MW11A**

PAGE 1 OF 2

PROJ LOCA DRILL SAMF GROU TOP ( LOGG	TION LING ME PLING N JND EL	White	Omegatier, CA	ga C A Ollov Cont 151	v Stem inuous	Auger, 5-foot	10-inch Core	n Diamter	DATE COMPLETED         12/13/01           CASING TYPE/DIAMETER         Sch. 40           SCREEN TYPE/SLOT         Sch. 40 PVC           GRAVEL PACK TYPE         #3 Monterey	5 / 0.020- Sand/8 /5% Ben	-inch cu. ft. ntonite / 140 gal.
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHO	DLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
NM		0 48	NR CORE			ML			ILT with a trace of clay, micaceous. e subangular 1/2-inch gravel.	0.2	Traffic-rated Vault Rapid-set concrete
0.0		60	CORE		 - 10 	ML ML		Dark yellowish brown 5/3) SILT, to trace cl Olive brown (2.5Y 4/ mottled with oxides. feet bgs, fine grained	5Y 5/3), sandy SILT, slightly moist.  n (10YR 4/4) to light olive brown (2.5Y ay, slightly moist, micaceous. 3) clayey SILT, moist, micaceous, 6-inch olive brown sand lens at 13 d, some silt, well sorted, slightly lation and root casts at 16.5 feet bgs.	7.4 9.0 10.0	
0.0		60	CORE			ML			5Y 5/3), silty very fine SAND.	18.0	Portland Cement Gro with 5% Bentonite
2.3		60	CORE		20    25	ML		and trace clay, mottl bgs, color change to odor. At 25.5 feet by	4), SILT with trace to little fine sand ed, some cemented areas. At 24 feet dark gray (5Y 4/1), slight fuel-like gs, increase in sand content, grading set bgs. Some oxidation.		Sch. 40 PVC Blank Casing
2.3		0 36	NR CORE	0	  - 30- 	SP		and trace clay, 90% moist. At 32.5 feet befines. Color change	n (10YR 3/4), fine SAND, trace silt sand and 10% fines, very well sorted, gs, fine to medium sand, with trace at 34 feet bgs to olive brown (2.5Y s, pale olive (5Y 6/3), and wet.	28.0	— Bentonite Ch



## WELL NUMBER MW11A

PROJECT NUMBER 20074.515.009.0321

DATE STARTED 12/13/01

PROJECT NAME Omega OU-02

DATE COMPLETED 12/13/01

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WEL	L DIAGRAM
		0	NR CORE	0		SP		Dark yellowish brown (10YR 3/4), fine SAND, trace silt and trace clay, 90% sand and 10% fines, very well sorted, moist. At 32.5 feet bgs, fine to medium sand, with trace fines. Color change at 34 feet bgs to olive brown (2.5Y 4/3). At 38.6 feet bgs, pale olive (5Y 6/3), and wet. (continued)	39.0		
		0	NR		-40-	SP- SW	s ()	Dark gray (5Y 4/1), gravelly SAND, medium to coarse grained sand, 80% sand and 20% subrounded 1.5-inch gravel, wet.	41.0		
0.0		36	CORE					Dark olive gray (5Y 3/2), SAND with some gravel, 90% medium to coarse sand, 10% gravel, trace silt moderately sorted. At 44.8 feet bgs, silty sand lens. At 48 feet bgs, olive gray (5Y 4/2) fine to coarse sand.			-#3 Montere
		0	NR	0	-45- 	SP- SW					Sch. 40 PV 0.020-inch Slotted Wel Screen (40
		30	CORE		-50-		. O C	Sandy GRAVEL with some silt and trace clay, 70% gravel,	49.5		50 feet bgs)
0.0		0 42	NR CORE	0		GP ML	0,0	20% sand and 10% fines, gravel is subrounded and predominantly 1/2-inch in diameter, partially cemented.  Olive (5Y 4/4), clayey SILT, 1% sand and 99% fines, very small lenses of sandy gravel, micaceous.	51.5		
0.0					-55	GM	:00	Silty GRAVEL, some sand and trace clay, 80% gravel, 5% sand and 15% fines, gravel is predominantly subrounded and 1/2 to 1-inch in diameter.	53.5 55.0		
								Bottom of borehole at 55.0 feet.			

#### **ARCADIS LOG OF BORING MW12** Infrastructure, environment, facilities (Page 1 of 5) Omega Chemical Operable Unit 2 **Date Completed** : August 9, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern Driller : Dan Checked By : Ronald Halpern **Drilling Method** : Sonic **Drilling Company** : WDC Diameter : 6 1/4" Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW12 **Blow Count** GRAPHIC Recovery % Depth Elev.: 221.23 Time OVA in DESCRIPTION Feet Lab No. Cover 0 Concrete to approximately 6". Surface Casing 0.5-8' core: SILTY CLAY, stiff, slightly moist, dark yellowish brown (10YR 4/4), no odor. 0.0 CL Same as above. 10:30 0.0 9.5-11' core: Well graded GRAVEL with Sand and Silt, ~60-70% fine and coarse Gravel 10 0.0 (max 55 mm dia.), ~25-30% fine to coarse well graded Sand, ~10% Silt, dark yellowish GW-GM 95% Cement/ 5% Bentonite brown (10YR 4/4), no odor, Gravel and Sand subangular to subrounded 2" Dia. Sch. 80 PVC 0.0 None 14-19' core: High plasticity, CLAY, very stiff, moist, dark grayish brown (10YR 3/2), no odor, high toughness, high liquid limit, very 10:52 0.0 plastic, no dilatency. :OMMONIMTech5\Omega Chemical\MW-12.BOR CH 20 Same as above. 11:10 0.0 11:24

In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection with Altamar Place.

0.0

# Omega Chemical Operable Unit 2 Project No. CA000646.0001 Date Completed Logged By Checked By Drilling Company Drill Rig

Time

12:02

12:29

13:10

13:30

14:30

8/8/05

OVA

0.0

0.0

0.0

0.0

1.5

0.3

1.0

23

46

52

ML

CL

Blow Count

Lab No.

Depth

in

Feet

25

30

35

40

45

#### **LOG OF BORING MW12**

OVA

Driller

**Drilling Method** 

: August 9, 2005

: Ronald Halpern

: Ronald Halpern

(Page 2 of 5) : MiniRae

: Dan

: Sonic

**Drilling Company** : WDC Diameter : 6 1/4" Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW12 GRAPHIC Recovery % Elev.: 221.23 DESCRIPTION CH Same as above. 27-29' core: Poorly graded SAND with Clay and Gravel, ~35-50% predominantly fine subangular Gravel (<=20 mm dia.), ~55-60% fine and coarse Sand (gap grades), ~5% SP-SC Clay, dry, dark yellowish brown (10YR 4/6), no odor, Gravel sub-spherical and subrounded of granitic origin. 30-31.5' core: CLAYEY SAND with Gravel, 20% fine and coarse subrounded Gravel SC-CL (max 35 mm dia.), ~40% predominantly wellf fine to coarse Sand (subrounded) in 40% Silty Clay matrix, dense, moist, brown (10YR 4/3), caliche and brownish yellow (10YR 6/8) patches, (conglomerate). 34-36': Same as above. 95% Cement/ 5% Bentonite SC 37-39' core: Same as above. 2" Dia. Sch. 80 PVC 39-44' core: Low plasticity SILT, stiff, moist, brown (7.5YR 4/4), occassional fine Gravel.

44-47.5': SILTY CLAY with Sand, ~5% fine subangular Gravel (max 15 mm dia.), ~10% fine to coarse Sand (max 5 mm dia.), ~85% fines, brown (7.5YR 4/2), moist, stiff, no odor, moderate to high toughess, moderate plasticity.

In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection with Altamar Place.

OMMON/MTech5\Omega Chemical\MW-12.BOF

			RCAI e, environi			<del>2</del> 5			LOG OF BORIN	NG MW1	(Page 3 of 5)
	Omega	a Ch	emical Ope No. CA0006	rable Un	nit 2		Date Cor Logged & Checked Drilling Co	Ву	: Ronald Halpern E : Ronald Halpern E : WDC E	OVA Oriller Orilling Method Diameter Calibration Gas	: MiniRae : Dan : Sonic : 6 1/4"
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %		GRAPHIC	DESCRIPTION		Well: MW12 Elev.: 221.23
55-						None	CL CL		No recovery.		
65—				13:45			CL-ML		SILTY CLAY/CLAYEY SILT, stiff, r brown (7.5YR 4/2).  At 64', dark greenish gray (Gley 1 staining on wall of sample.  At 65' CLAYEY SILT, stiff, moist to brown (7.5YR 4/3), no odor, low to toughness, very slow to no dilatence	3/2), o wet, moderate	95% Cement/ 5% Bentonite 2" Dia. Sch. 80 PVC
70							CL		Same as above.  At 72' SILTY CLAY, hard, moist, br (7.5YR 4/3), caliche, high toughnes plasticity, high dry strength.	rown s, moderate	

In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection with Altamar Place.

#### **ARCADIS** LOG OF BORING MW12 Infrastructure, environment, facilities (Page 4 of 5) **Date Completed** Omega Chemical Operable Unit 2 : August 9, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern Driller : Dan Checked By : Ronald Halpern **Drilling Method** : Sonic **Drilling Company** : WDC Diameter : 6 1/4" Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW12 **Blow Count** GRAPHIC Recovery % Depth Elev.: 221.23 Time OVA in DESCRIPTION Feet Lab No. 75 95% Cement/ 5% Bentonite Same as above - no caliche. CL 2" Dia. Sch. 80 PVC Bentonite 80 Med. Chips ML 85 14:53 At 85', SILT, soft (>1" penetration), moist to wet, dark brown (7.5YR 3/4). From 86.5-89': CLAYEY SAND/SANDY CLAY, ~45-55% very fine Sand (<0.1 mm), SC soft, wet to saturated, strong brown (7.5YR 4/6), trace fine Gravel, low toughness, rapid Sand #30 dilatency. From 89' CLAY/CLAY with SAND, ~15% fine 2" Dia. PVC Sch 80 (0.020" Slotted Screen) Sand, 85% Silty Clay, medium stiff, wet, 90 strong brown (7.5YR 4/4) to dark brown (7.5YR 3/4). OMMON/MTech5\Omega Chemical\MW-12.BOR CL Same as above, trace fine-Gravel, occasional 95 coarse, wet to saturated. Same as above, wet to saturated, ~10-15% fine Sand, ~15% Silt, ~10% Clay, medium stiff, wet to saturated, dark brown (7.5YR 2" Dia. Sch. 80 **PVC Blank** 3/2), low to medium toughness, low plasticity, high dry strength: In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection with Altamar Place.

			e, environn			2					(Page 5 of 5)
			emical Oper No. CA0006				Date Cor Logged E Checked Drilling C Drill Rig	By By	: August 9, 2005 : Ronald Halpern : Ronald Halpern : WDC : Sonic SpeedStar 15K	OVA Driller Drilling Method Diameter Calibration Gas/	: MiniRae : Dan : Sonic : 6 1/4" Conc : 100 ppm isobutylene
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTI	ION	Well: MW12 Elev.: 221.23
100-	$\bigotimes$		OC2-PMW12 W-0-03	16:00 8/9/05 08:05			SP-SM		From 101-102' set Simulpro SAND, with SILT, ~10-20% Sand, soft, saturated, brown dark brown (10YR 3/3), occa coarse gravel (max 60 mm cand longated).	Silt, 80-90% fine (10YR 4/3), to asional fine and	Bentonite Chips 2" Dia. Sch. 80 PVC Blank
110-	$\left  \right $						SM		From 107-109' core: Cemen SILTY SAND with Gravel, ~ fine to coarse Sand, ~25% f Gravel (max 40 mm dia.), ha brown (7.5YR 4/4), light gray reddish organge.	30% Silt, ~45% ine and coarse ard, dry mottled	Bentonite Med. Chips
115									Bottom of boring at 110'.		
120-											

#### **ARCADIS** LOG OF BORING MW13 Infrastructure, environment, facilities (Page 1 of 3) Omega Chemical Operable Unit 2 **Date Completed** : July 1, 2005 OVA : MiniRae Whittier & Santa Fe Springs Logged By : Ronald Halpern Driller : Steve Houston Project No. CA000646,0001 Checked By : Ronald Halpern **Drilling Method** : Mud Rotary **Drilling Company** : WDC Diameter : 10" Drill Rig : GEFCO Star 30K. Calibration Gas/Conc : Isobutylene 100 Well1: MW13A Well2: MW13B Blow Count Recovery % GRAPHIC Depth Elev.: 206.30 OVA Time DESCRIPTION Feet Lab No. Cover 0 Concrete to 6" Casing (Off cyclone). SILTY CLAY, firm to stiff, 5-6/29/05 0.1 dark brown (10YR 3/3), moist. 10-15 Same as above. Approximately 5% fine to 20-12:46 coarse SAND. 95% Cement 25-CL 5% Bentonite Slurry (30-31' Split Spoon). SILTY CLAY, stiff, 307 2" Dia.Sch. 80 PVC Blank dark yellowish brown (10YR 4/4), moist, $\boxtimes$ N/A 13:38 0.1 moderate to high toughness, no dilatency, high plasticity, occassional fine gravel (max 20 mm dia.) and coarse sand (max 4 mm dia.). 35 (40-41' Split Spoon). SILTY CLAY, stiff, 40dark yellowish brown (10YR 4/4), moist, $\boxtimes$ N/A 14:30 0.1 high toughness, high plasticity, slow dilatency. 45 Boring in front of Fred Rippey at 12482 Putnam Street. Elevation noted is ground surface. A = shallow (dry); B = deeper.

## **ARCADIS**

#### LOG OF BORING MW13

	Wh	ittier	emical Ope & Santa Fe No. CA0000	e Springs	6		Logged Checke	d By Company	: July 1, 2005 : Ronald Halpern : Ronald Halpern : WDC : GEFCO Star 30K	OVA Driller Drilling Methor Diameter Calibration Ga	: MiniRae : Steve Hous d : Mud Rotary : 10" as/Conc : Isobutylene	
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	N	Well1: MW13A Well2: MW13B Elev.: 206.30	
50	×			16:20	0.1		CL		(50-51' Split Spoon). SILTY C dark yellowish brown (10YR 4/	LAY, hard, (4), moist.	5% Siu	6 Cement Bentonite rry dium stonite Chip
60	M			16:55			ML-SP		(60.75' Split Spoon). Low plas SILT/poorly graded Sand, very stiff, olive (5Y 4/4), moist, low rapid dilatency, low plasticity, lestrength, light gray artifacts, pomarine origin, light yellowish be oxidation stain (~1/4" thick).	r fine-grained, toughness, ow dry ossibly of	2" [ Sch	Dia.Sch. 80 C Blank Dia. PVC 80 (0.020 ted Screer
65							SP		From apprx. 63' off shaker - pc Sand, fine-grained, olive.  (70-71' Split Spoon). CLAYEY light olive brown (2.5Y 5/4), mc	SILT, stiff,	-#2/ <sup>*</sup>	16 Sand Dia.Sch. 80
75	$\boxtimes$			17:25 6/29/05 Start 6/30/05			ML-CL		moderate to high toughness, me plasticity, slow to moderate dilagray artifacts (possible marine low to moderate strength.	noderate atency, light	☐ ☐ ☐ Med	C Blank lium tonite Chip
80	$\boxtimes$			07:50			СН		(80-81' Split Spoon). SILTY CI yellowish brown (10YR 5/4), m toughness, moderate to high lid dilatency, high plasticity, high of	oist, high guid limit, no	2" E PVC	ia.Sch. 80 Blank
85	$\boxtimes$			08:30				1//	(85-86' Split Spoon). CLAYEY CLAY, very stiff, (<1/4" penetra brown (7.5YR 4/3), moist, low t toughness, moderate plasticity.	SILT/SILTY ation), o moderate		Bentonite d Mix
90	$\boxtimes$			09:20			CL		(90-91' Split Spoon). CLAYEY CLAY, very stiff, brown (7.5 YR moist, low to moderate toughner plasticity, slow dilatency.	SILT/SILTY		
95	$\boxtimes$			09:45					(95-96' Split Spoon). CLAYEY CLAY, very stiff, brown (7.5 YR moist, low to moderate toughne plasticity, slow dilatency.	(4/4),		

Boring in front of Fred Rippey at 12482 Putnam Street. Elevation noted is ground surface. A = shallow (dry); B = deeper.

#### **ARCADIS** LOG OF BORING MW13 Infrastructure, environment, facilities (Page 3 of 3) Omega Chemical Operable Unit 2 **Date Completed** : July 1, 2005 OVA : MiniRae Whittier & Santa Fe Springs Logged By : Ronald Halpern Driller : Steve Houston Project No. CA000646.0001 Checked By : Ronald Halpern **Drilling Method** : Mud Rotary **Drilling Company** : WDC Diameter : 10" Drill Rig : GEFCO Star 30K Calibration Gas/Conc : Isobutylene 100 Well1: MW13A Well2: MW13B **Blow Count** Recovery % SRAPHIC Depth Samples Elev.: 206.30 OVA Time **JSCS** DESCRIPTION Feet Lab No. 100 Driller noted easier drilling @1021 ML-CL (105-106' Split Spoon). High plasticity, 105- $\boxtimes$ CLAY, hard, brown (10YR 5/3), moist, high 11:40 liquid limit, no dilatency, high toughness, high plasticity, high dry strength. 1:1 Bentonite 110 CH Sand Mix (115-116' Split Spoon). SILTY CLAY, hard, 115 dark yellowish brown (10 YR 4/4), moist, $\boxtimes$ 12:12 high toughness, high liquid limit, high plasticity, high dry strength. Medium (120-121' Split Spoon). SANDY SILT with 120- $\bowtie$ **Bentonite Chips** 17:40 ML clay, approx 10-20% clay, approx 30-40% 2" Dia.Sch. 80 very fine to fine sand, approx 40-60% silt; V PVC Blank stiff, dark yellowish brown (10 YR 4/4), moist, low plasticity, low toughness, top\18:05 moderate dilatency, low dry strength 125-#2/16 Sand SP (122 off E-log; from 124 off shaker; OC2-PMW13 Start 125-126 Split Spoon). Poorly graded W-0-04 SAND, approx 90% fine-grained, 10% 2" Dia. PVC 07:15 medium-grained, (0.5-1 mm dia.), dark grayish brown (2.5 Y 4/2), wet/saturated. Sch 80 (0.020" 130-OC2-PMW13 Slotted Screen) W-0-04 SM Increased SILT content with depth. (133-134' Split Spoon). Low plasticity CL CLAY, approx 3-5% fine sand, firm to very stiff (approx 1/4" penetration), light olive brown (2.5Y 5/3) with oxidation stains 135 COMMONIMTech5lOmega ChemicallMW-13.BOR " Dia.Sch. 80 SW **PVC Blank** ranging from yellowish brown to dark reddish brown (5YR 3/4), moist to wet, low to moderate toughness, low liquid limit, 140 moderate dilatency, low to moderate plasticity, possible organic (continental) artifacts, preferred horizontal fracture plane. 145 (135-139' off E-log): SAND. Bottom of boring at 139'.

Boring in front of Fred Rippey at 12482 Putnam Street. Elevation noted is ground surface. A = shallow (dry); B = deeper.

150

#### **ARCADIS** LOG OF BORING MW14 Infrastructure, environment, facilities (Page 1 of 4) Omega Chemical Operable Unit 2 **Date Completed** : May 5, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Jeremy Cook Driller Checked By **Drilling Method** : Ronald Halpern : Sonic **Drilling Company** : WDC Diameter · 6" Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW14 Blow Count GRAPHIC Recovery Elev.: 172.98 Depth Time DESCRIPTION Feet Lab No. Cover -Surface Casing Concrete Asphaltic concrete to ~6", aggregate base to 1 ft. SILTY CLAY, hard, dark brown (10YR 3/3), moist, no odor. SILTY CLAY, hard, dark yellowish brown (10YR 4/4), slightly moist, friable. 2" Dia. Sch. 80 PVC CL 95% Cement/ 5% Bentonite Slurry Same as above.

DESCRIPTION OF BORING LOCATION: In parking lot, southeast corner of 12393 Washington Boulevard - Oncology Center (part of Presbyterian Intercommunity).

11:50

NOTES: Elevation is of ground surface.

COMMONIMTech5lOmega ChemicallMW-14.BOR

20

#### **ARCADIS** LOG OF BORING MW14 Infrastructure, environment, facilities (Page 2 of 4) Omega Chemical Operable Unit 2 **Date Completed** : May 5, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Jeremy Cook Driller Checked By : Ronald Halpern **Drilling Method** : Sonic **Drilling Company** : WDC : 6" Diameter Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW14 Blow Count GRAPHIC Recovery Depth Elev.: 172.98 Time in DESCRIPTION Feet Lab No. 25 (20-37') SILTY CLAY, medium stiff to stiff, dark yellowish brown (10YR 4/4), moist. 30 CL 35 12:45 2" Dia. Sch. 80 PVC (37-42.5'): Low plasticity SILT with CLAY, medium stiff, light olive brown (2.5Y 5/4), slightly moist, low toughness, moderate to rapid dilatency. 95% Cement/ 5% Bentonite Slurry 40 ML OMMONIMTech5\Omega Chemical\MW-14.BOR (42-46'): Non plastic SILT, soft to medium stiff, olive brown (2.5Y 4/3), slightly moist.

(46-55'): Poorly graded SAND with SILT, ~10%-20% silt, 80-90% very fine sand (<0.5 mm diameter), olive

(5Y 5/3), slightly moist.

DESCRIPTION OF BORING LOCATION: In parking lot, southeast corner of 12393 Washington Boulevard -Oncology Center (part of Presbyterian Intercommunity).

SP-SM

NOTES: Elevation is of ground surface.

#### **ARCADIS** LOG OF BORING MW14 Infrastructure, environment, facilities (Page 3 of 4) Omega Chemical Operable Unit 2 **Date Completed** : May 5, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Jeremy Cook Driller Checked By : Ronald Halpern **Drilling Method** : Sonic **Drilling Company** : WDC Diameter : 6' Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW14 **Blow Count** GRAPHIC Recovery Samples Elev.: 172.98 Depth Time in DESCRIPTION Feet Lab No. 50 13:13 Wet from ~52'. SP-SM 95% Cement/ 5% Bentonite Slurry 2" Dia. Sch. 80 55 (55-57'): Poorly graded SAND, ~5% Silt, 95% fine to Medium Chips medium sand (max. 2 mm diameter), olive brown, OC2-PMW14 15:40 SP W-0-3 (57-58'): Well graded SAND with Gravel, ~20-30% SW #30 Sand fine and coarse igneous and metamorphic subrounded gravel (max. 55 mm diameter), ~70% fine to coarse subangular sand (max 5 mm diameter), olive brown, wet to saturated. (58-60'): Poorly graded SAND, predominantly fine to medium (~80-90%), ~10-20% coarse sand; olive brown to dark olive brown (2.5Y 3/3 to 4/3), wet. 60 14:30 (60-65'): Poorly graded SAND with Gravel: ~15-20% subangular gravel, ~80-85% predominantly fine to medium grained sand (<2 mm) and some coarse (<5 mm), micaceous. (65-73'): Poorly graded SAND with Gravel ~15-20%: 65 subangular to rounded, gravel, ~80-85% poorly graded medium to coarse sand (0.5 mm - 3 mm 5/6/06 diameter) subangular quartz feldspar, micaceous SP #2/12 Sand OC2-PMW14 W-0-06 2" Dia. PVC Sch 80 (0.020" Slotted Screen) COMMONIMTech5lomega Chemical\MW-14.BOR 70 No Water Recovered (73-75'): Poorly graded SAND with Gravel, ~10-15% subrounded-subangular gravel, 85-90% poorly graded fine to medium sand (0.01-1 mm diameter) well rounded to subrounded; predominantly quartz, plagloclase, and micas.

DESCRIPTION OF BORING LOCATION: In parking lot, southeast corner of 12393 Washington Boulevard - Oncology Center (part of Presbyterian Intercommunity).

NOTES: Elevation is of ground surface.

6	2	Al	<b>RCAI</b>	DIS	)		V			LOG OF E	BORING MW1	14
			e, envirann			ties						(Page 4 of 4)
	Omega Chemical Operable Unit 2 Project No. CA000646.0001							e Comp ged By cked B ing Co Rig	/	: May 5, 2006 : Jeremy Cook : Ronald Halpern : WDC : Sonic SpeedStar 15K	OVA Driller Drilling Method Diameter Calibration Gas	: MiniRae : : Sonic : 6" //Conc : 100 ppm isobutylene
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC		DESCRIPTION	ON	Well: MW14 Elev.: 172.98
75- 80- 85- 90- 95- 100-		No	Water Recove	red			SP MH ML-SP		gravel ( fine to i (76-77') wet, ox (77-80') (0.05-1	): Poorly graded SAND w (10-30 mm diameter), 70 medium Sand (<2 mm), s ): Plastic SILT with Clay, idation stains in Clay. ): Nonplastic SILT, borde mm); oxidation stainings ): SILT, stiff.  of boring at 83'.	brown (10YR 4/3), pring very fine sand	-#2/12 Sand -2" Dia. Sch. 8i PVC Blank  -Medium Chips

NOTES: Elevation is of ground surface.

	a Ch	e, <i>envirom</i> emical Ope No. CA0000	erable Ur	nit 2		Date Co Logged Checked Drilling C	By d By Compa	: Ronald Halpern, PG Driller : Ronald Halpern, PG Drilling Method ny : WDC Diameter	(Page 1 of 4)  : Thermo : : Sonic : 6 1/4"	
Depth In Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well: MW15 Elev.: 148.57
5-							ML		Asphait to 6" and underlying base to 1'.  (8-13' core): SILT, soft (>1" penetration), moist to wet, no odor.	95% Cemer 5% Bentoni 2" Dia. Sch. PVC
20-				12:58			CL		Change in consistency at 13', soft to medium stiff.  (13 to 18' core): SILTY CLAY, medium stiff (1/4-1/2" penetration), moist, dark yellowish brown (10YR 3/6), callche from 14.5-18'.  Same as above - stiff.	

(	Omega Chemical Operable Unit 2 Project No. CA000646.0001								d: August 11, 2005 : Ronald Halpern, PG : Ronald Halpern, PG : Ronald Halpern, PG Drilling Method Diameter : Sonic SpeedStar 15K Calibration Gas/	(Page 2 of 4)  : Thermo : : Sonic : 6 1/4"  Conc : 100 ppm isobutylene		
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well: MW Elev.: 14	-	
25							CL		Same as above - very stiff.  Same as above.			
-							ML		Poorly graded SANDY SILT, with Clay, ~30% fine Sand, ~70% Silt w/Clay, hard, moist, dark yellowish brown (10YR 4/6).			
35-							CL		SILTY CLAY, very stiff, moist, dark brown (10YR 3/3).		─95% Cemer 5% Bentonit	
1.1.1							SP-SM		(36-38' core): Poorly graded SAND with SILT, 85% fine-grained, 15% Silt, molst, brown (10YR 4/3), micaceous, wet at 38 feet.		−2" Dia. Sch.	
40-	M			13:17			SM-ML		(38-42' core): Poorly graded SILTY SAND/SANDY SILT, ~40-60% fine Sand, ~40-60% Silt, soft, saturated, olive brown (2.5Y 4/3).	*	PVC	
45-	$\langle \rangle$		DC2-MW15 W-0-03	13:35 15:24			SP-SM		(42-43'): Poorly graded SAND with SILT, ~10-20% Silt, 80-90% fine to medium soft, saturated, olive brown (2.5Y 4/3). (43-45' Simulprobe): Poorly graded SAND-fine, saturated, olive brown (2.5Y 4/3).			
-	$\mathbb{X}$						SP			· · · · · · · · · · · · · · · · · · ·	Bentonite Ch	
50	X	0	C2-PMW12 W-0-05	17:10			-		(48-50'): Poorly graded SAND, ~66% fine, 34% medium to coarse sand (max 5 mm dia.), brown, saturated, subrounded.		Sand #1C	

Omega Chemical Operable Unit 2 Project No. CA000646.0001							Date Co Logged	Ву	: Ronald Halpern, PG Driller	(Page 3	mo
							Drilling C Drill Rig			: Soni : 6 1/4 /Conc : 100	
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well: MN Elev.: 14	10.1370
50						SP		(50-53.5'): Poorly graded SAND, predominantly fine-grained as above, yellowish brown (10YR 5/6) to dark yellowish brown.  (53.5-54.4'): Poorly graded SAND, predominantly fine (50%), medium (25%), coarse (25%), saturated, yellowish brown to dark yellowish			
55-							ML		brown (10YR 5/6-4/6). (54.4-56.8'): SILT, medium stiff, moist to wet, light of the brown (2.5Y 5/4), (horizontally laminated).		
60-	X		OC2-PMW12 W-0-07	8/10/05			sw		(56.8-61' Simulprobe): Well graded SAND, fine to coarse, occasional Gravel-subrounded, saturated, olive brown (2.5Y 4/4).		-2" Dia. PVC
65				7:30			SP		(61-70' core): Poorly graded SAND, predominantly fine to lower-end medium-grained (max 1 mm dia.), occasional coarse sand, fine and coarse gravel (max. 30 mm dia.), light olive brown (2.5Y 5/3), wet.		Sch 80 (0.02 Slotted Scree —Sand #1C
70-	\ X		Simulprobe OC2-PMW12 W-0-08	8:15 9:25					(70-72' Simulprobe): Same as above.		
=	M						ML	Ш	(72-73' core): SILT, medium stiff, (~1/4" penetration), wet, olive brown (2.5Y 4/4),		2" Dia. Sch. 8 PVC Blank
-	IXI			Ú			SP		micaceous. (73-74' core): Poorly graded SAND, fine-grained,		T VO BIGIN
75	/ N						ML	Ш	wet, olive brown (2.5Y 4/3)), micaceous.		

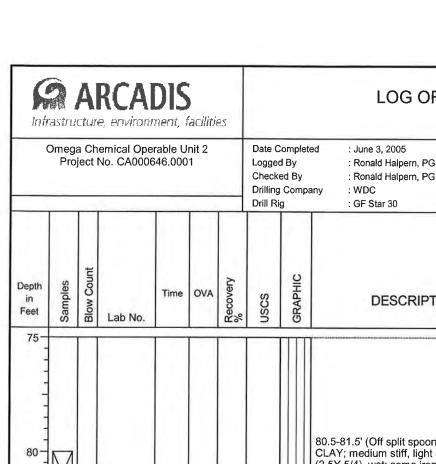
			, envirant			5	5.0		(Page 4 of 4)			
			emical Ope lo. CA0006				Date Con Logged I Checked Drilling C Drill Rig	∃y IBy	: August 11, 2005 : Ronald Halpern, PG : Ronald Halpern, PG : WDC : Sonic SpeedStar 15K	OVA Driller Drilling Method Diameter Calibration Gas/	: Thermo : : Sonic : 6 1/4" /Conc : 100 ppm isobutylene	
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	ON	Well: MW15 Elev.: 148.57	
75-	$\bigvee$						CL SP-SM	(7) (7) (8) (7) (7)	74-75'): SILT, medium stiff, w 2.5Y 4/3). 75-76'): Poorly graded SAND' ne sand, 60-70% Silt, mediund live brown (2.5Y 4/3). 76-79'): SILTY CLAY, stiff, mo 2.5Y 4/4). 79-80' core): Poorly graded Sandal	Y SILT, ~30-40% n stiff to soft, wet, pist, olive brown	—Bentonite C	
80-	V N						CL	(E	70-80% fine sand, ~20-30% s rown. 80-81' core): SILTY CLAY, ha rown. ottom of boring at 81'.	/		
85-												
90-				-								
95-												

Omega Chemical Operable Unit 2 Project No. CA000646.0001								Comple ed By ked By g Comp	: Ronald Halpern, PG Drille : Ronald Halpern, PG Drillin any : WDC Diam	Method : Mud Rotary		
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well1: MW16A Well2: MW16B Well3: MW16C Elev.: 153.19		
5-				5/27/05 12:00			ML	77	SILT with CLAY, (~5-10% clay), soft to medium stiff, dark yellowish brown (10YR 3/4), moist, no odor.	Surface Casing		
15-							SP		Off cyclone @14'; SAND, poorly graded: ~95-98% fine to medium-grained (max diam. 1 mm); dark yellowish brown (10YR 4/4), moist, no odor.	PVC Blank 2" Dia. Scl PVC Blank		

#### **ARCADIS** LOG OF BORING MW16 (Page 2 of 8) Omega Chemical Operable Unit 2 **Date Completed** : June 3, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Mark Green Checked By : Ronald Halpern, PG **Drilling Method** : Mud Rotary **Drilling Company** : WDC Diameter : 8 3/4" Drill Ria : GF Star 30 Calibration Gas/Conc : 100 ppm isobutylene Well1: MW16A Well2: MW16B Well3: MW16C **Blow Count** GRAPHIC Recovery % Samples Depth Elev.: 153.19 Time OVA in DESCRIPTION Feet Lab No. 25 SP 95% Cement/ 5% Bentonite 30-Off split spoon @ 30-31.5. CLAYEY SILT to SILTY CLAY; soft, light olive brown 14:29 1.3 (2.5Y 5/4), moist, no odor; moderate dilatency, moderate toughness, moderate to high plasticity. ML-CI 35-" Dia. Sch. 80 **PVC Blank** (Off Shaker): Poorly graded SAND with Silt; ~10-15% Silt, ~85-90% predominately fine-grained sand, some medium-grained 2" Dia. Sch. 80 (max 1 mm diam.), light olive brown (2.5Y **PVC Blank** 4/3 to 4/4). SP-SM 2" Dia. Sch. 80 **PVC Blank** 40 Same as above, moist to wet, no odor. Stopped drilling 5/27/05 at 15:15 14:58 Bentonite Chips (Off Shaker) 43-47': Poorly graded SAND, 5/31/05 predominantly fine to medium grained (max OMMON\MTech5\Omega Chemical\MW-16.BOR 8:40 1 mm diam), occasional fine gravel (<1%; max diam 7 mm); brown. SP 45 Sand #2/16 (Off Shaker) 47-50': Poorly graded SAND with Silt-Silty Sand: ~5-15% silt, 85-95% predominantly very fine to fine sand; olive 2" Dia. PVC Sch 80 (0.020" Slotted Screen SP-SM brown. In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection with Altamar Place.

#### **ARCADIS** LOG OF BORING MW16 Infrastructure, environment, facilities (Page 3 of 8) OVA Omega Chemical Operable Unit 2 Date Completed : June 3, 2005 : MiniRae Project No. CA000646.0001 Driller Logged By : Ronald Halpern, PG : Mark Green : Mud Rotary Checked By : Ronald Halpern, PG **Drilling Method Drilling Company** : WDC Diameter : 8 3/4" Drill Rig : GF Star 30 Calibration Gas/Conc : 100 ppm isobutylene Well1: MW16A Well2: MW16B Well3: MW16C Blow Count GRAPHIC Recovery % Elev.: 153,19 Depth Time OVA uscs DESCRIPTION in Feet Lab No. 50 50.25-50.75 (off split spoon). Well graded SW SAND with Silt: ~10-15% silt, ~85-90% No Water 9:04 100 fine to coarse sand (max 5 mm dia.), Recovery occasional fine gravel; dark yellowish ML 1.4 brown (10YR 4/4) to brown (10YR 4/3), saturated. At 50.75-51.5 (off split spoon); SILT, medium stiff, yellowish brown (10YR 5/6) GP to dark olive brown (2.5Y 3/3), wet, no 55-2" Dia. Sch. 80 odor. PVC with (0.020 At 53'; Poorly graded GRAVEL, ~10% fine OC2-PMW16 12:56 Slotted Screen to medium sand, ~85% fine subrounded, igneous gravel, ~5% silt. W-0-04 56-57 (off split spoon). Poorly graded SP Sand #2/16 SAND, fine to medium-grained (max ~0.75 mm dia.); olive (5Y 4/4), saturated. 60-Non plastic SILT; medium stiff, olive brown (2.5Y 4/3), wet; occasional subrounded 2" Dia. Sump OC2-PMW16 14:30 fine gravél. W-0-06 2" Dia. Sch. 80 **PVC Blank** 2" Dia. Sch. 80 **PVC Blank** 65-ML 1:1 Bentonite Mix Sand #3 70 70.5-71.5' (Off split spoon): Non plastic SILT, soft to medium stiff, olive brown OC2-PMW16 15:50 W-0-07 OC2-PMW16 (2.5Y 4/3), moist, bands of iron oxide staining; micaceous. W-1-08 In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection

with Altamar Place.



#### LOG OF BORING MW16

(Page 4 of 8) : MiniRae

: Mark Green

: Mud Rotary

: 8 3/4"

Calibration Gas/Conc : 100 ppm isobutylene

Well1: MW16A Well2: MW16B Well3: MW16C

Weil2: MW16
Weil3: MW16
Elev.: 153.19

OVA

Driller

Diameter

Drilling Method

80.5-81.5' (Off split spoon): SILT with CLAY; medium stiff, light olive brown (2.5Y 5/4), wet; some iron oxide banding, OC2-PMW16 W-0-09 17:35 micaceous. ML 85 Increased CLAY content. 90 Stopped drilling 5/31/05 at 18:00. Resumed 6/1/05. OC2-PMW16 W-0-10 6/1/05 Off split spoon. Poorly graded SILTY SAND, ~10-15% silt, ~75% predominantly fine to medium grained (max 1 mm dia.), 8:40 SM occasional (~3-5%) coarse sand (~4 mm dia.) and ~5% fine gravel (max dia. 30 mm); olive brown (2.5Y 4/3), saturated. 95 Off shaker. Same as above. ~5% coarse sand, 5% fine gravel. Increasing grain size - grades into well graded SAND, fine to coarse (max 5 mm), SW occasional fine gravel (max 20 mm), dark grayish brown (10YR 4/2), saturated, subrounded grains. Change in soil type observed at 100.5. 100

Mix Sand #3
—2" Dia. Sch. 80
PVC Blank
—2" Dia. Sch. 80

1:1 Bentonite

=2" Dia. Sch. 80 PVC Blank

In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection with Altamar Place.

NOTES:

### **ARCADIS** Infrastructure, environment, facilities Omega Chemical Operable Unit 2 Project No. CA000646.0001

#### LOG OF BORING MW16

(Page 5 of 8)

**Date Completed** 

: June 3, 2005

OVA

: MiniRae

Logged By Checked By : Ronald Halpern, PG : Ronald Halpern, PG Driller **Drilling Method** 

: Mark Green : Mud Rotary

**Drilling Company** Drill Rig

: WDC : GF Star 30 Diameter

: 8 3/4" Calibration Gas/Conc : 100 ppm isobutylene

Blow Count GRAPHIC Recovery % Depth Time OVA uscs in Feet Lab No.

0.1

No Water

Recovery Mud

No Water

Recovery

Mud

OC2-PMW16

W-0-12

12:00

13:35

14:40

0.6

0.1

DESCRIPTION

Well1: MW16A Well2: MW16B Well3: MW16C Elev.: 153.19

SW (Off split spoon): SILTY CLAY; stiff, brown (10YR 4/3), moist, no odor; No Water 9:50 0.2 Recovery Mud occasional yellowish red (5YR 4/4), CL staining, (possible iron oxide), high toughness, moderate plastic, no dilatency, positive ribbon test. (Off shaker and mud pan), CLAYEY

SC

GP

GW

ML

SAND: well graded, ~35-45% clay, ~45-55% fine to coarse sand (max 5 mm dia.), ~10% fine gravel (max 15 to 18 mm dia.); very dense; olive brown clay matrix; saturated; sand is subrounded, fine gravel platey and subangular of igneous origin.

111-112' (Off split spoon): Poorly graded GRAVEL with Sand: ~60% fine gravel (max 18 mm dia.) ~40% fine to coarse sand (max 5 mm dia.), of igneous origin, subrounded to subangular.

Well graded GRAVEL with Sand: ~60% fine and coarse gravel (max 30 mm) ~40% fine to coarse sand.

114-114.25' (Off split spoon): Non plastic SILT; medium stiff, olive brown, wet.

CLAYEY SILT: ~60-90% silt, 10-40% clay, light olive brown (2.5Y 5/4), moist, no odor; brittle, low toughness, low to moderate plasticity, rapid to moderate dilatency, sticky.

1:1 Bentonite Mix Sand #3

Bentonite Chips 2" Dia. Sch. 80 PVC Blank 2" Dia. PVC Sch 80 (0.020" Slotted Screen Sand #3 2" Dia. Sch. 80 PVC Blank 2" Dia. Sump Bentonite Chips

1:1 Bentonite

Mix Sand #3

In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection with Altamar Place.

100

105

110-

115

120

OMMON\MTech5\Omega Chemica\\Mw-16.BOR

#### ARCADIS LOG OF BORING MW16 (Page 6 of 8) Date Completed OVA Omega Chemical Operable Unit 2 : June 3, 2005 : MiniRae Project No. CA000646.0001 Driller Logged By : Ronald Halpern, PG : Mark Green Drilling Method Checked By : Ronald Halpern, PG : Mud Rotary **Drilling Company** : WDC Diameter : 8 3/4" Drill Rig : GF Star 30 Calibration Gas/Conc : 100 ppm isobutylene Well1: MW16A Well2: MW16B Well3: MW16C Blow Count GRAPHIC Recovery % Elev.: 153.19 Depth Time OVA DESCRIPTION in Feet Lab No. 125 (off shaker). Same as above. 130-131.5' (Off split spoon): SILT; firm, olive brown (2.5Y 4/4), moist; micaceous, ML borderline very fine sand, rolls, low toughness, rapid dilatency, low plasticity. 130-Set Simulprobe at 16:40 at 132-134'. 16:20 Stopped drilling 6/1/05. Resume 6/2/05. 132-133.5 (Off split spoon). Poorly graded GRAVEL with Clay: ~80-90% fine subrounded to subangular gravel (max 20 16:40 GP-GQ. mm dia.), occasional coarse gravel (max 25 mm dia.) in an olive brown (2.5Y 4/3) OC2-PMW16 W-0-14 6/2/05 0.2 silty clay matrix; stiff moist, no odor; gravel of igneous origin. From 133.5 - SILT, stiff, olive brown (2.5Y 135 1:1 Bentonite: 4/3), moist, no odor. Sand #3 Mix ML 2" Dia. Sch. 80 PVC Blank 140.5-141.5: Poorly graded SAND, fine-grained (max dia. ~0.1-0.2 mm); olive brown (2.5Y 6/3), moist, no odor. 140 SP 7.15 COMMONIMTech5lOmega ChemicaliMW-16.BOR OC2-PMW16 8:30 W-0-15 CL

145' (off mud pan); CLAY with Sand,

matrix; olive brown (2.5Y 4/3).

~10-15% fine to coarse sand in silty clay

149' Off mud pan: Poorly graded SAND,

fine to medium (max 2 mm dia.),

subrounded.

Bentonite Chips

Sand #2/16

" Dia. PVC Sch 80 (0.020" Slotted Screen

In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection with Altamar Place.

SP

150-

145

#### **ARCADIS** LOG OF BORING MW16 Infrastructure, environment, facilities (Page 7 of 8) Omega Chemical Operable Unit 2 **Date Completed** : June 3, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Mark Green Checked By : Ronald Halpern, PG **Drilling Method** : Mud Rotary **Drilling Company** : WDC : 8 3/4" Diameter Drill Rig : GF Star 30 Calibration Gas/Conc : 100 ppm isobutylene Well1: MW16A Well2: MW16B Well3: MW16C Blow Count GRAPHIC Recovery % Samples Depth Elev.: 153.19 OVA Time USCS in DESCRIPTION Feet Lab No. 150 151-151.5 (off split spoon): Poorly graded GP GRAVEL: predominantly fine (max 19 mm No Water 11:36 0.1 dia.), occasional coarse (max 25 mm dia.), Recovery subrounded igneous source (plag, mafic, minerals). 151.5 to 152 (off split spoon): Poorly graded SAND: predominantly fine grained No Water 14:00 (~10-15% medium <1 mm dia.), dense, Recovery SP olive brown (2.5Y 4/4), wet. 155 154-155' (off split spoon): Poorly graded SAND; fine to medium grained (max 1 mm dia.), olive brown (2.5Y 4/4) to light olive 2" Dia. Sch. 80 brown (2.5Y 5/4), wet. PVC with (0.020 Slotted Screen 160-At 160-162 off split spoon. Same as above. ~10-20% silt, 80-90% fine to OC2-PMW16 W-0-16 15:50 0.1 medium sand (max 2 mm dia.), dark grayish brown (2.5Y 4/2), wet. SP-SM -Sand #2/16 165 2" Dia, Sump Driller indicates change in soil type at 170' based on drilling conditions/clay on drill bit. Change also observed on shaker. Stopped drilling 6/2/05 at 16:45 at 170'. 16:45 Simulprobe set overnight 170 170-172 (off split spoon); SILTY CLAY, CL very stiff, dark yellowish brown (10YR OC2-PMW16 6/3/05 4/4 to 4/6), moist, light bluish gray (Gley 2 W-0-19 8/1) artifacts, (marine?); some blackish artifacts-possibly decayed organic; moderate to high toughness, no dilatency, moderate to high plasticity, low liquid limit, high dry strength. In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection with Altamar Place.

NOTES:

#### **ARCADIS** LOG OF BORING MW16 Infrastructure, environment, facilities (Page 8 of 8) Omega Chemical Operable Unit 2 Date Completed : June 3, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Mark Green Checked By : Ronald Halpern, PG **Drilling Method** : Mud Rotary **Drilling Company** : WDC Diameter : 8 3/4" Drill Rig : GF Star 30 Calibration Gas/Conc : 100 ppm isobutylene Well1: MW16A Well2: MW16B Well3: MW16C **Blow Count** GRAPHIC Recovery % Depth Samples Elev.: 153.19 Time OVA DESCRIPTION Feet Lab No. 175 -Sand #2/16 CL 180-Same as above, very stiff to hard, strong brown (7.5YR 5/6-4/6), slightly moist. 8:17 Bottom of boring at 182'. 185 190-195 In the greenbelt on the east side of Dice Road, approximately 85 feet north of the centerline intersection with Altamar Place. NOTES: Elevation = ground surface; A = Shallow, B = Intermediate, C = Deep Well.

#### **ARCADIS** LOG OF BORING MW17 Infrastructure, environment, facilities (Page 1 of 8) Omega Chemical Operable Unit 2 **Date Completed** : June 28, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Steve, Joe, Daniel Checked By : Ronald Halpern, PG **Drilling Method** : Simulprobe/Split Spoon **Drilling Company** : WDC Diameter : 8 3/4 Drill Rig : GF Star30 Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW17A Well2: MW17B % **Blow Count** Well3: MW17C GRAPHIC Recovery Depth Elev.: 159.42 Time OVA DESCRIPTION Feet Lab No. Cover 0 Unpaved soil Surface 5-CL (Off cylcone): SILTY CLAY, stiff, brown (10YR 4/3), slightly moist, no odor. 10-(Off cyclone): SILTY CIAY, stiff, dark yellowish brown (10YR 4/6), dry to slightly moist, ~3-5% fine sand. 95% Cement/ 5% Bentonite 2" Dia Sch. 80 **PVC Blank** (Off cyclone): Poorly graded SAND/SILT, very fine-grained sand, light yellowish brown (2.5Y 6/4), dry to slightly moist. 15 SP-ML 20

(Off mud return): Poorly graded SAND, predominantly fine to medium grained, ~5-10% coarse (3-4 mm dia.)

Boring location on southwest sidewalk of Pike Street opposite 12005 Pike Street (behind McMaster Carr). Elevation noted is ground surface.

SP

OMMON/MTech5/Omega Chemical/MW-17.BOR



#### LOG OF BORING MW17

Infrastructure, environment, facilities (Page 2 of 8) Omega Chemical Operable Unit 2 **Date Completed** : June 28, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Steve, Joe, Daniel Checked By : Ronald Halpern, PG **Drilling Method** : Simulprobe/Split Spoon **Drilling Company** : WDC Diameter : 8 3/4 Drill Rig : GF Star30 Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW17A Well2: MW17B % Well3: MW17C **Blow Count** GRAPHIC Recovery Depth Elev.: 159.42 Time OVA DESCRIPTION Feet Lab No. 25 SP 30-(30-31' Split Spoon): CLAY, hard, strong 10:43 brown (7.5YR 4/6), moist, mottled with light gray and reddish brown, ~3-5% fine sand. CL 35-(36' Off shaker): Poorly graded SAND, 95% Cement/ ~80-90% fine to medium Sand, ~10-20% 5% Bentonite medium to coarse Sand. 2" Dia Sch. 80 **PVC Blank** 40 SP At 11:45 set Simulprobe 4-41.5'. 12:00 0.7 100% No water at 12:00 (40-41.5' off Simulprobe): Poorly graded SAND, predominantly (90-95%) fine to medium sand (up to 1 mm dia.), 5-10% low-end coarse sand (2-2.5 mm di.), yellowish brown (10 YR 5/4) to dark OMMON\MTech5\Omega Chemical\MW-17.BOR yellowish brown (10YR 4/4), wet. 45 (Based on E-logs) ML

A = Shallow; B = Intermediate; C = Deep

Elevation noted is ground surface.

Boring location on southwest sidewalk of Pike Street opposite 12005 Pike Street (behind McMaster Carr).



(Page 3 of 8)

Omega Chemical Operable Unit 2 Project No. CA000646.0001

Date Completed

: June 28, 2005

OVA

: MiniRae

Logged By Checked By : Ronald Halpern, PG : Ronald Halpern, PG

Driller **Drilling Method**  : Steve, Joe, Daniel : Simulprobe/Split Spoon

**Drilling Company** 

: WDC

Diameter

: 8 3/4

	_					Drill Ri	g	: GF Star30 Mud Rotary Calibratio	on Gas/Conc : 100 ppm isobutylene
Septh in September Septemb	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well1: MW17A Well2: MW17B Well3: MW17C Elev.: 159.42
55		OC2PMW17 W-0-04	13:50	1.1	100%	ML		(50-51.5' off Simulprobe): SILT with CLAY, soft to firm (~1/4" penetration), yellowish-brown (10YR 5/6), wet (not saturated), rapid dilatency, low toughness, low plasticity, occasional black (organic?) artifacts, occasional evidence of horizontal layering, sticky.	95% Cement/ 5% Bentonite  Bentonite Chip 2" Dia Sch. 80 PVC Blank
60		No Water Recovery		0.4	100%			(60-60.5' from Simulprobe): Same as above. (60.5-61.5' from Simulproble): Poorly graded SAND, fine-grained (max 1/2 mm dia.), light olive brown (2.5Y 5/3), moist, no odor.	2" Dia Sch. 80 PVC Blank
65		Dry Canister	6/22/05		100%	SP		(65-66.5' from Simulprobe): Poorly graded SAND, ~75-80% fine to medium grained sand (up to 2 mm dia.), ~20-25% coarse (max 5 mm dia.), occasional fine gravel, light olive brown (2.5Y 5/3), wet.	2" Dia Sch. 86 PVC (0.020" Slotted Scree — Sand #2/16
70-					-	ML		(Based on E-logs)	— 2" Dia Sch. 80 PVC w/Thread End Cap

Boring location on southwest sidewalk of Pike Street opposite 12005 Pike Street (behind McMaster Carr). Elevation noted is ground surface.

A = Shallow; B = Intermediate; C = Deep

#### **ARCADIS LOG OF BORING MW17** (Page 4 of 8) Omega Chemical Operable Unit 2 **Date Completed** : June 28, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Steve, Joe, Daniel Checked By : Ronald Halpern, PG **Drilling Method** : Simulprobe/Split Spoon **Drilling Company** : WDC Diameter : 8 3/4 Drill Rig : GF Star30 Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW17A Well2: MW17B Well3: MW17C **Blow Count** GRAPHIC Recovery Samples Elev.: 159.42 Depth Time OVA DESCRIPTION Feet Lab No. 75 (75-77' off Simulprobe): SILT, firm (~1/4" 2" Dia Sch. 80 penetration), brown (7.5YR 5/4), mottled 8:30 9:30 PVC w/Threaded No Water with light gray and reddish brown, wet (but Recovery End Cap not saturated), low plasticity, low toughness, slow dilatency, low liquid limit. ML (77-80' off mud return): SANDY SILT, ~15% fine to medium Sand, saturated (max 2 mm dia.) in brown clayey Silt matrix. 80-(Based on E-logs) 1:1 Bentonite Sand #3 2" Dia Sch. 80 **PVC Blank** 85-(85-87' off Simulprobe): SILTY CLAY, hard, reddish brown (5YR 4/4), slightly moist, No Water 10:30 11:30 ~10-20% fine-grained size (15-20 mm dia.) Recovery modules of clay, sub-spherical and CL subrounded. 2" Dia Sch. 80 PVC Blank 90-Bentonite Chips MMMON/MTech5/Omega Chemical/MW-17.BOR (95-97' Split Spoon): Poorly graded SAND, ~3-5% reddish brown clay, ~95-97% fine to medium Sand (<=1 mm dia.), strong 95 V 12:30 14:00 Sand #2/16 OC2PMW17 W-0-06 OC2PMW17 brown (7.5YR 4/4), to olive brown (2.5Y SP 2" Dia Sch. 80 4/3), saturated. W-1-07 PVC (0.020" Slotted Screen 100 Boring location on southwest sidewalk of Pike Street opposite 12005 Pike Street (behind McMaster Carr). Elevation noted is ground surface. A = Shallow; B = Intermediate; C = Deep

#### **ARCADIS** LOG OF BORING MW17 Infrastructure, environment, facilities (Page 5 of 8) Omega Chemical Operable Unit 2 **Date Completed** : June 28, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Steve, Joe, Daniel Checked By : Ronald Halpern, PG **Drilling Method** : Simulprobe/Split Spoon **Drilling Company** : WDC : 8 3/4 Diameter Drill Rig : GF Star30 Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW17A Well2: MW17B Well3: MW17C **Blow Count** GRAPHIC Recovery Elev.: 159.42 Depth Samples Time OVA **NSCS** DESCRIPTION Feet Lab No. 100 (102' off shaker): Poorly graded SAND: ~70-80% fine to medium grained, ~20-30% " Dia Sch. 80 SP PVC (0.020" Slotted Screen medium to coarse (max 5 mm). Sand #2/16 105-(105-107' off Simulprobe): CLAYEY SILT, firm (<1/4" penetration), light olive brown (2.5Y 4/3), moist, rapid dilatency, moderate 14:40 15:50 No Water Recovery toughness, low plasticity, positive ribbon 2" Dia Sch. 80 PVC w/Threaded test, trace very fine sand. End Cap Bentonite Chips 110 Off mud return at 110' - same as above. ML 2" Dia Sch. 80 PVC Blank (115-117' off Simulprobe): SILT, medium stiff (1/4-3/8" penetration), light olive brown 115 6/22/05 (2.5Y 5/3) to olive brown (2.5Y 4/3), wet (but not saturated), low plasticity. OC2PMW17 6/23/05 At 117' driller indicates change soil type. W-0-08 1:1 Bentonite (117' off shaker): Well graded SAND with Sand #3 Silt and Gravel, ~5-10% Silt, ~5% Clay, ~60-70% fine to coarse Sand (max dia. 5 mm), and ~30% fine gravel, yellowish brown, sand and gravel subangular to SW-SC subrounded and sub-spherical. 120

Boring location on southwest sidewalk of Pike Street opposite 12005 Pike Street (behind McMaster Carr). Elevation noted is ground surface.

SP

A = Shallow; B = Intermediate; C = Deep



(Page 6 of 8)

	ire, environi	115111, 1	(SICINE)LE						(Page 6 of 8)
	hemical Ope t No. CA0006				Logged	ed By Compa	: Ronald Halpern, PG : Ronald Halpern, PG	OVA Driller Drilling Method Diameter Calibration Gas/Cor	: MiniRae : Steve, Joe, Daniel : Simulprobe/Split Spo : 8 3/4 nc : 100 ppm isobutylene
Septh Samples Solution Samples	Lab No.	Time	OVA	Recovery %	USCS	GRAPHIC	DESCRIPTION	Well2: Well3:	: MW17A : MW17B : MW17C 159.42
125	No Water Recovery	9:00			SP		(125-127' off Simulprobe): Poorly grashND with SILT, ~3-5% Silt, 95-97% fine Sand, olive (5Y 4/4), wet, does a rapid dilatency, no dry strength.	% very	
130-					CL		(From 130' based on E-log)  (~132' off mud return): SILTY CLAY brown (2.5Y 4/3), moderate toughne moderate plasticity.	, olive	
135	No Water Recovery			50%			(135-137' off Split Spoon): SILT with ~5% Clay, hard, olive (5Y 5/3), mois to medium toughness, moderate dila moderate plasticity.	st, low	—1:1 Bentor Sand #3 —2" Dia Sch PVC Blanl
140-		-			ML		Off mud return - same as above.  Change in color - off mud return.		
145	OC2PMW17 W-0-09	14:33					(145-147' off Simulprobe): SILT with firm (~1/4" penetration), dark greenis (Gley 1 4/1), wet, low to moderate toughness, low plasticity, moderate dilatency.	CLAY, sh gray	

A = Shallow; B = Intermediate; C = Deep

Elevation noted is ground surface.

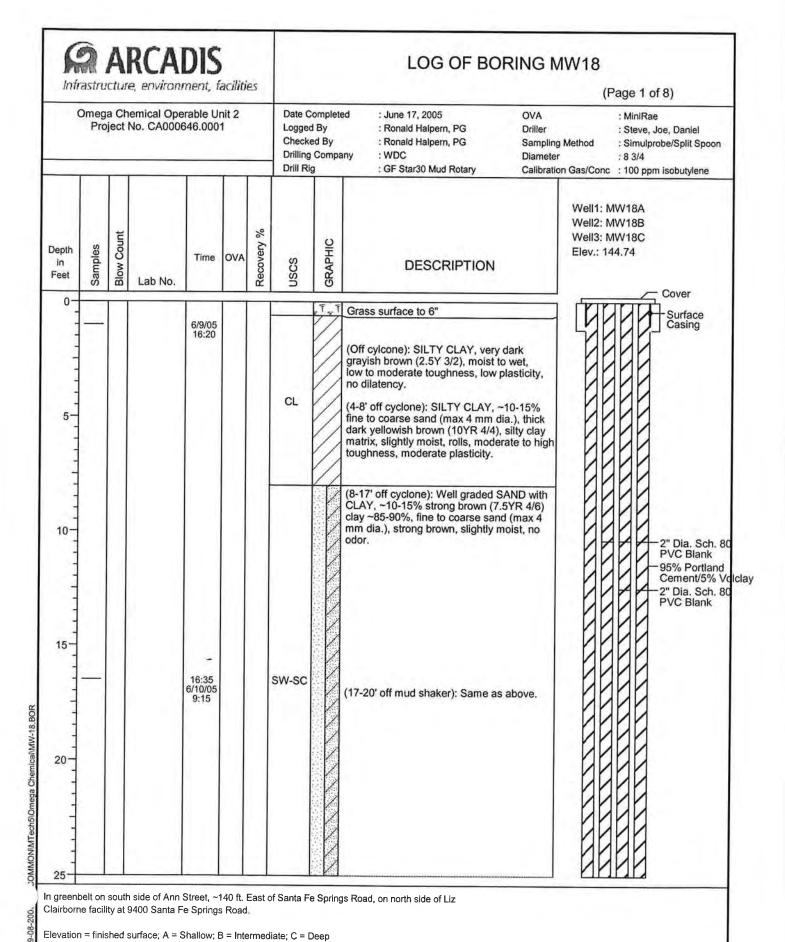
#### **ARCADIS** LOG OF BORING MW17 (Page 7 of 8) Omega Chemical Operable Unit 2 Date Completed : June 28, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Steve, Joe, Daniel : Ronald Halpern, PG Drilling Method Checked By : Simulprobe/Split Spoon **Drilling Company** : WDC : 8 3/4 Diameter Drill Rig : GF Star30 Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW17A Well2: MW17B Well3: MW17C Blow Count GRAPHIC Recovery Elev.: 159.42 Depth Time OVA DESCRIPTION in Feet Lab No. 150 ML (153-157' Split Spoon): SILTY CLAY, hard (fingernail penetration), dark greenish gray (Gley 1 3/1), with caliche (effervescent/HC1), dry to slightly moist. 155-CL 1:1 Bentonite Sand #3 160 2" Dia Sch. 80 PVC Blank Change in drilling according to driller. (165-166' Split Spoon): Sandy non-plastic 165 SILT, hard, pale-olive (5Y 6/3) with 40% ML yellowish brown (10YR 5/8) oxidation stains, moist. Bentonite Chips (170-171' Split Spoon): Poorly graded 170-SAND-fine grained (0.1-0.2 mm dia.), light olive gray (5Y 6/2), wet, subangular to subrounded sand grains, ~70-80% quartz, 6/24/05 8:52 ~15% mafic, 5-15% other. SP Sand #2/16 " Dia Sch. 80 PVC (0.020" Slotted Screen

A = Shallow; B = Intermediate; C = Deep

Elevation noted is ground surface.

Boring location on southwest sidewalk of Pike Street opposite 12005 Pike Street (behind McMaster Carr).

	Omega	a Che	e, <i>envirann</i> emical Oper No. CA0006	able Ur	nit 2	=7)	Date Co Logged Checke Drilling Drill Rig	By d By Compa	: Ronald Halpern, PG Driller : Ronald Halpern, PG Drilling M ny : WDC Diameter	lethod : Simulp	e Joe, Daniel robe/Split Spoor
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well1: MW17A Well2: MW17B Well3: MW17C Elev.: 159.42	
175-							SP		Change in color at ~175 ft to brownish yellow (10YR 6/6), with reddish brown oxidation planes.		-2" Dia Sch. PVC (0.020 Slotted Scr
185			OC2PMW17 W-0-13	13:55			SP-SM		Driller indicates "GRAVEL" at 180'. (180' off mud return): Poorly graded SAND, ~80-90% fine to medium grained (max 2 mm dia.), ~5% coarse Sand, ~5% fine Gravel (max 14 mm dia.). (180-182' off Simulprobe): Poorly graded SAND with SILT, ~5-10% Silt, 90-95% fine to medium Sand (max 1 mm dia.), light olive brown (2.5Y 5/6), with yellowish brown (10YR 5/6), oxidation planes, wet, no odor.		Sand #2/16  -2" Dia Sch. PVC w/Thre End Cap
190			OC2PMW17 W-0-15	6/27/05 10:55			SP ML-CL		(190' off mud return): Poorly graded/well graded SAND, ~90% fine to medium-grained Sand (max 2 mm dia.) ~5-10% coarse Sand (max 5 mm dia.), <3% fine Gravel.  (190-191.5' off Simulprobe): Poorly graded SAND with SILT, ~10% Silt, ~3-5% coarse Sand, 85-90% fine to medium Sand (max 2 mm dia.), oxidation planes, wet, no odor.  (191.5-192' off Simulprobe): CLAYEY SILT/SILTY CLAY, moist, (2.5Y 5/6) with yellowish brown oxidation planes (10YR 5/6), no odor, moderate toughness, moderate to high plasticity, low dilatency.		
200-									Bottom of boring at 192 ft.		



		environr			<b>es</b>	Det- C	nm=1-1	od . him 47 0005	0)//	(P	age 2 of 8	3)
		nical Ope				Date Co Logged Checke Drilling Drill Rig	By d By Compa	: Ronald Halpern, PG : Ronald Halpern, PG	OVA Driller Sampling Diameter Calibration	Method n Gas/Conc	: 8 3/4	e/Split Spoon
Depth seldweg	Blow Count	Lab No.	Time	OVA	Recovery %	sosn	GRAPHIC	DESCRIPTION		Well1: M Well2: M Well3: M Elev.: 14	W18B W18C	
25			10:17					(Off mud shaker): Poorly graded SA with silt, ~10-15% silt, ~85-90% fine medium grained sand, olive brown 4/2).	e to			
30-			10:40			SP-SM		Poorly graded SAND with SILT, ~10 silt, ~85-90% predominantly fine-grasand with 5% medium-grained sand brown (2.5Y 4/3), wet, single cobblemm dia.), granitic, sub-spherical, subrounded.  (Based on E-Logs)	ained d, olive			
35-			- 10:55 12:40			CL		(40-42' Split Spoon): SILTY CLAY, sfirm (<1/4" penetration), olive gray 5/2), moist, light gray (5Y 7/1), high toughness, high plasticity, positive r test, blocky fracture, silty features, of gray matrix with no definite shape.	(5Y ibbon			" Dia. Sch. & PVC Blank 15% Portland Cement/5% \ " Dia. Sch. & PVC Blank

Elevation = finished surface; A = Shallow; B = Intermediate; C = Deep



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Omega Chemical Operable Unit 2 Project No. CA000646.0001

Date Completed

: June 17, 2005 : Ronald Halpern, PG OVA Driller : MiniRae

Logged By Checked By

: Ronald Halpern, PG

Sampling Method Diameter

: Steve, Joe, Daniel : Simulprobe/Split Spoon

95% Portland Cement/5% Volclay -2" Dia. Sch. 80 PVC Blank

Bentonite Chips

2" Dia. Sch. 80 PVC Blank

-2" Dia. PVC Sch 80 (0.020' Slotted Screen

**Drilling Company** 

: WDC

: 8 3/4

Drill Rig

: GF Star30 Mud Rotary

Calibration Gas/Conc : 100 ppm isobutylene

Well1: MW18A

epth in eet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION
50	M			13:35			ML		(50-52' Split Spoon): SILT, firm, light olive brown (2.5Y 5/4), moist, no odor.
-							SP-SM		(53' off shaker): Poorly graded fine SAND with SILT, predominantly fine-grained. Wet from 54 feet.
55-			OC2-PMW18 W-0-03 OC2-PMW18 W-1-04	1,000			SP		(55-57' off Split Spoon): Poorly graded SAND, ~3-5% clay, 95-98% predominantly fine sand (max 0.5 mm dia.), <5% medium grained (max dia. 1 mm), olive brown (2.5Y 4/3), saturated.  (~58' off mud pan): Increase in grain size to fine and medium Sand (max 2 mm dia.).
				8:00			SW-SM		(62'): Increasing grain size - grades into well graded SAND with SILT, ~3-5% silt, 85-95% fine to coarse sand, ~5-10% fine sub spherical to sub tabular gravel.
35-			OC2-PMW18 W-0-06 OC2-PMW18 W-0-07	8:54 10:10			GW	3 . d	(65-66.5' Split Spoon): Well graded GRAVEL, ~5-10% coarse sand, 90-95% fine and coarse gravel (max 30 mm dia.) of igneous and metamorphic origin (quartz, ligneiss), gravel, subrounded, sub spherical
70							SP		to elongated.  (66.5-67' Split Spoon): Poorly graded SAND, fine-grained (max 0.5 mm dia.), light olive brown (2.5Y 5/3), wet.
-									(72'): Increasing grain size up to 2 mm dia., pale olive (5Y 6/3) with dark mafic minerals.

Well2: MW18B Well3: MW18C Elev.: 144.74

Sand #2/16

2" Dia. Sch. 80 PVC w/Threaded End Cap

In greenbelt on south side of Ann Street, ~140 ft. East of Santa Fe Springs Road, on north side of Liz Clairborne facility at 9400 Santa Fe Springs Road.

Elevation = finished surface; A = Shallow; B = Intermediate; C = Deep

:OMMON/MTech5\Omega Chemical\MW-18.BOR

#### **ARCADIS** LOG OF BORING MW18 Infrastructure, environment, facilities (Page 4 of 8) Omega Chemical Operable Unit 2 **Date Completed** : June 17, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Steve, Joe, Daniel Checked By : Ronald Halpern, PG Sampling Method : Simulprobe/Split Spoon **Drilling Company** : WDC : 8 3/4 Diameter Drill Ria : GF Star30 Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW18A Well2: MW18B Well3: MW18C **Blow Count** GRAPHIC Recovery Depth Elev.: 144.74 Time OVA in DESCRIPTION Feet Lab No. 75 (75-77' from Simulprobe): Well graded 2" Dia. Sch. 80 SAND with Clay and Gravel: ~10-15% silt, PVC w/Threaded End Cap OC2-PMW18 11:12 12:25 0.6 ~40% predominantly fine-gravel (max 19 W-0-09 mm dia.), some coarse (up to 35 mm dia.), -45-50% fine to coarse sand (max 4 mm Sand #2/16 dia.), light olive brown (2.5Y 5/4), wet; gravel is of igneous and metamorphic origin, subangular to subrounded, platy to sub spherical. 80-1:1 Bentonite Sand #3 Encountered more rocks at ~82' according SW-SM 2" Dia. Sch. 80 to driller. **PVC Blank** (83-85' off shaker): Fine to coarse SAND with SILT, ~5-10% Silt. 85-(86-87' Split Spoon): Well graded Silty SAND with Gravel: ~10-20% light olive brown (2.5Y 5/4) silt, 30-40% fine and OC2-PMW18 13:40 W-0-10 16:04 coarse gravel (max 20 mm dia.) subangular Bentonite Chip and sub spherical, ~40-60% fine to coarse 2" Dia. Sch. 80 sand, gravel is reworked sediment **PVC Blank** consisting of gravel-size rocks of igneous metamorphic origin encased in semi-indurated sand and silt layer. 90 (~90' off shaker): Poorly graded SAND, fine to medium, olive (5Y 4/3), saturated. SP OMMONIMTech5/Omega Chemical/MW-18.BOR Sand #2/16 95 2" Dia, PVC (Possible Slough - 95-96.5'): Poorly graded GRAVEL with Sand and Silt, ~5-10% silt, Sch 80 (0.020" Slotted Screen OC2-PMW18 6/14/05 GP-GM W-0-12 ~20-25% medium to coarse sand, ~70% predominantly fine gravels (up to ~14 mm), ~5% coarse gravel (max 25 mm dia.)

subrounded.

(97' Split Spoon and Shaker): Poorly

graded SAND: fine to medium-grained (max 2 mm dia.), olive (5Y 7/4), saturated. Increasing grain size w/depth (off shaker):

In greenbelt on south side of Ann Street, ~140 ft. East of Santa Fe Springs Road, on north side of Liz Clairborne facility at 9400 Santa Fe Springs Road.

SP

Elevation = finished surface; A = Shallow; B = Intermediate; C = Deep

# ARCADIS Infrastructure, environment, facilities Omega Chemical Operable Unit 2 Project No. CA000646.0001

# LOG OF BORING MW18

(Page 5 of 8)

(	Omega Proj	a Ch	emical Oper No. CA0006	able U	nit 2		Date C Logged Checke Drilling Drill Rig	By d By Compa	: Ronald Halpern, PG : Ronald Halpern, PG	OVA Driller Sampling Diameter Calibration	Method	: Simulp : 8 3/4	e Joe, Daniel robe/Split Spoor m isobutylene
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	uscs	GRAPHIC	DESCRIPTION		Well1: M Well2: M Well3: M Elev.: 14	W18B W18C	
100							sw-sc		(100' off shaker): Well graded SAN Clay, ~5-10% fines, ~60% fine to m Sand, ~40-45% coarse Sand (max dia.) subrounded, olive (5Y 7/4), sa	5 mm			−Sand #2/16 −2" Dia. Sch PVC w/Thre End Cap −Bentonite C
105			OC2-PMW18 S-0-13 No Water Recovery	9:45 11:00		0%	ML		(107-109' off Split Spoon): SILT, firm (<=1/4" penetration), olive (5Y 4/3) strong brown (7.5YR 4/6), vertical to moist to very moist, but no saturate blocky fragmentation.	with panding.			
115		ā	OC2-PMW18 W-0-14	13:05	0.1		SP-SM		(115-119' off Simulprobe): Poorly g SAND with Silt, predominantly fine ~5-10% Silt, moist to very moist, oli brown (2.5Y 4/3 - 2.5Y 4/4).	Sand,		KEREKEREKEREKEREKEREKEREKEREKEREKEREKER	−2" Dia. Sch PVC Blank −1:1 Bentoni Sand #3
125							ML						

In greenbelt on south side of Ann Street,  $\sim$ 140 ft. East of Santa Fe Springs Road, on north side of Liz Clairborne facility at 9400 Santa Fe Springs Road.

Elevation = finished surface; A = Shallow; B = Intermediate; C = Deep

#### **ARCADIS** LOG OF BORING MW18 Infrastructure, environment, facilities (Page 6 of 8) Omega Chemical Operable Unit 2 **Date Completed** : June 17, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Steve, Joe, Daniel Checked By : Ronald Halpern, PG Sampling Method : Simulprobe/Split Spoon **Drilling Company** Diameter : 8 3/4 Drill Rig : GF Star30 Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW18A Well2: MW18B % Well3: MW18C Blow Count GRAPHIC Recovery Depth Samples Elev.: 144.74 OVA Time USCS in DESCRIPTION Feet Lab No. 125 (125-128' off Simulprobe): Clayey SILT, ~10-20% clay, ~80-90% silt, moist to very moist, olive brown (2.5Y 4/4), low OC2-PMW18 W-0-15 15:30 0.1 toughness, medium plasticity, moderate dilatency, low dry strength. OC2-PMW18 15:40 S-0-16 130-ML 1:1 Bentonite Sand #3 135-(135-137' Split Spoon): SILT, firm (<1/4" penetration), olive (5Y 4/4), moist, some 2" Dia. Sch. 80 light gray artifacts. **PVC Blank** OC2-PMW18 6/15/05 0% 0.4 S-0-18 7:55 No Water Recovery 140-(~141 off mud return): Silty CLAY, yellowish brown (10YR 5/4). CL Bentonite Chips 145 (145-147' off Simulprobe): SILT, firm, olive (5Y 4/4), moist, light gray (possible marine) artifacts-looks like wormhole - secondary OC2-PMW18 9:35 11:00 fill with secondary porosity. W-0-21 Sand #2/16 ML Increasing sand content based on E-logs. 2" Dia. PVC Sch 80 (0.020' Slotted Screen

In greenbelt on south side of Ann Street,  $\sim$ 140 ft. East of Santa Fe Springs Road, on north side of Liz Clairborne facility at 9400 Santa Fe Springs Road.

Elevation = finished surface; A = Shallow; B = Intermediate; C = Deep

150



(Page 7 of 8)

			C, CHYNUIN								(۲	age 7	010)
			emical Ope No. CA0006				Date Control Logged Checker Drilling Drill Rig	ed By Compa	: Ronald Halpern, PG : Ronald Halpern, PG	OVA Driller Sampling Diameter Calibratio		: Simulp : 8 3/4	ae Joe, Daniel probe/Split Spoon om isobutylene
epth in eet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION		Well1: M Well2: M Well3: M Elev.: 14	W18B W18C	
150							SP-SW		Change in soil type based on drille observation and on material from return.  Poorly to well graded SAND, very high-end medium-grained (max 2)	mud fine to			
55-			OC2-PMW18 W-0-22	12:15 13:50			ML		(155-157' from Simulprobe): Claye firm, (<1/4" penetration), olive (5Y wet, low toughness, high plasticity dilatency, low dry strength with low limit.	4/4), r, rapid v liquid			—2" Dia. PVC Sch 80 (0.02 Slotted Scre —Sand #2/16
60-							SP-SW		Driller indicates "gravel" ~2' thick a 157-159.  E-logs suggest resistent material f ~158-163'.	from			
65			No Water Recovery	14:2 <del>0</del> 16:50 6/16/05 7:15		0%	ML		Clayey SILT (with Sand) off mud re~162'.  (165-167' Simulprobe): Clayey Sar~10% Clay, 50% Silt, 30-40% fine firm (<1/4" penetration), olive (5Y 4 moist to wet but not saturated.	ndy SILT, Sand;			-2" Dia. Sch. PVC w/Thre End Cap
70-							SP		(Based on E-logs)				−Bentonite Cl

In greenbelt on south side of Ann Street, ~140 ft. East of Santa Fe Springs Road, on north side of Liz Clairborne facility at 9400 Santa Fe Springs Road.

Elevation = finished surface; A = Shallow; B = Intermediate; C = Deep

#### **ARCADIS** LOG OF BORING MW18 Infrastructure, environment, facilities (Page 8 of 8) Omega Chemical Operable Unit 2 **Date Completed** : June 17, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Steve, Joe, Daniel Checked By : Ronald Halpern, PG Sampling Method : Simulprobe/Split Spoon : WDC **Drilling Company** Diameter : 8 3/4 Drill Rig : GF Star30 Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW18A Well2: MW18B Well3: MW18C Blow Count Recovery GRAPHIC Depth Elev.: 144.74 Time OVA USCS in DESCRIPTION Feet Lab No. 175 (175-176' Simulprobe): Poorly graded SAND, ~5% silt, moist to wet but not saturated, olive gray (5Y 4/2). SP OC2-PMW18 W-0-24 9:50 0.1 (176-177' Simulprobe): SILT, moist to wet, not saturated, olive gray (5Y 4/2), ~1 cm horizontal layer of yellowish discoloration. ML 180 (180' off mud return): Poorly graded SAND, fine to medium-grained (up to 1.5 mm), less than 3% coarse, driller indicates some gravel. Bentonite Chips 185 SP (185-187' off Simulprobe): Poorly graded SAND, fine-grained (max 0.2 mm dia.), grayish brown (2.5Y 5/2), saturated; OC2-PMW18 12:50 W-0-26 horizontal oxidized banding at ~186.5 ft. (1" thick) with horizontal fracture plane. Oxidized banding is strong brown (7.5YR 4/6) to dark yellowish brown (10YR 4/6). 190 Bottom of boring 190'. COMMONIMTech5tOmega Chemical\MW-18.BOR 195

In greenbelt on south side of Ann Street, ~140 ft. East of Santa Fe Springs Road, on north side of Liz Clairborne facility at 9400 Santa Fe Springs Road.

Elevation = finished surface; A = Shallow; B = Intermediate; C = Deep

200

#### **ARCADIS** LOG OF BORING MW19 Infrastructure, environment, facilities (Page 1 of 4) Omega Chemical Operable Unit 2 **Date Completed** : May 3, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller Checked By : Ronald Halpem, PG Sampling Method : Core/Simulprobe **Drilling Company** : WDC Diameter : 6" Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW19 Count Depth Elev.: 158.94 OVA Time DESCRIPTION Blow Feet Lab No. Cover Concrete to ~4". Surface Casing (0.5-5') SILT with Clay, medium stiff, dark yellowish brown (10YR 3/6) to brown Concrete (7.5YR 4/3), slightly moist. ML 5 (5-9' Core) Silt, medium stiff, brown (10YR 4/3), moist, low toughness, low plasticity, low dry strength. (9-11' Core) Poorly graded SAND with Silt to Silty SAND, ~10-20% Silt, ~80-90% fine Sand, medium dense, dark grayish brown 2" Dia. Sch. 80 PVC Blank 10 SP-SM (10YR 4/2), moist. 95% Portland (11-12' Core) SILT with Sand; ~20% fine Sand, ~80% Silt, olive gray (5Y 5/2), slightly Cement/5% Bentonite Slurry moist, no odor. (12-18' Core) Non plastic SILT, stiff, dark greenish gray (Gley 1 4/2), mottled with light greenish gray (Gley 1 7/1), moist, no OMMON'MTech5\Omega Chemical\Mw-19.BOR ML (18-19' Core) Non plastic SILT, soft, dark greenish gray (Gley 1 4/1), wet, no odor, (bordering fine Sand, max. diameter ~0.05 DESCRIPTION OF BORING LOCATION: In sidewalk on southside of McCann, opposite Bell Ranch Drive.

NOTES: Depth in feet below ground surface (bgs). Continuous core; Elevation noted is ground surface elevation.

#### **ARCADIS** LOG OF BORING MW19 Infrastructure, environment, facilities (Page 2 of 4) **Date Completed** Omega Chemical Operable Unit 2 : May 3, 2006 OVA : MiniRae Project No. CA000646.0001 : Ronald Halpern, PG Logged By Driller Checked By : Ronald Halpern, PG Sampling Method : Core/Simulprobe **Drilling Company** Diameter : 6" Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW19 Blow Count Recovery % Depth Samples Elev.: 158.94 OVA Time DESCRIPTION Feet Lab No. 20 11:15 (19-25') Clayey SILT with Sand: ~5-10% Clay; ~20% very fine Sand, ~70-75% Silt; hard, very dark grayish brown (10YR 3/2 to 2.5Y 3/2), slightly moist; moderate to high toughness, low to moderate plasticity, slow dilatency. (25-30') Non plastic SILT; medium stiff, dark 25 olive gray (5Y 3/2), moist. ML 2" Dia. Sch. 80 (30-32') Non plastic SILT; hard to medium stiff, dark olive gray (5Y 3/2), mottled with olive brown (2.5Y 4/3), slightly moist to **PVC Blank** 30 95% Portland moist. Cement/5% Bentonite Slurry (32-33) Poorly graded SAND; fine-grained, SP olive gray (5Y 5/2), slightly moist. (33-33.5') Non plastic SILT: medium stiff to stiff, dark greenish gray (Gley 1 4/1) mottled with light greenish gray (Gley 1 7/1), moist. 35 12:10 (33.5-39) Non plastic SILT bordering very fine Sand (<0.05 mm diameter); olive gray ML (5Y 5/2), slightly moist. (39-46) Poorly graded SAND with Silt: SP-SM ~10-20% Silt, 80-90% fine Sand (<0.4 mm diameter), olive gray (5Y 4/2), slightly moist.

DESCRIPTION OF BORING LOCATION: In sidewalk on southside of McCann, opposite Bell Ranch Drive.

NOTES: Depth in feet below ground surface (bgs). Continuous core; Elevation noted is ground surface elevation.

COMMONIMTech5lOmega ChemicallMW-19.BOR



Infrastructure, environment, facilities (Page 3 of 4) Omega Chemical Operable Unit 2 **Date Completed** : May 3, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller Checked By : Ronald Halpern, PG Sampling Method : Core/Simulprobe **Drilling Company** : WDC Diameter : 6" Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW19 **Blow Count** GRAPHIC Recovery % Depth Elev.: 158.94 OVA Time uscs in DESCRIPTION Feet Lab No. 40 45 (46-55' Core) Poorly graded SAND/Silty SAND; cemented ~20% Silt, 95% Portland Cement/5% Bentonite ~60% fine Sand, ~20% medium and coarse Slurry Sand (subangular); dark greenish gray (Gley 1 4/1), dry; trace subrounded fine gravel (to 8 mm diameter)(igneous). 2" Dia. Sch. 80 PVC Blank SP-SM 50 3/4" Chips OMMONIMTech5iOmega ChemicaliMW-19.BOR V 55 13:05 (55-57' Core) Well graded SAND; fine to coarse grained (max 4 mm diameter) of SW granitic origin; dark gray, wet. #2/16 Sand (57-58' Core) Poorly graded SAND with Silt/Silty SAND: ~10-20% silt, 80-90% fine SP-SM 2" Dia. Sch. 80 PVC to medium grained (max diameter 0.75 mm) Sand, dark greenish gray (Gley 1 4/1), wet. Sch 80 (0.020" Slotted Screen) (58-65' Core) Predominantly fine to medium SP grained (80-85%), some coarse (10%), gray, wet,

DESCRIPTION OF BORING LOCATION: In sidewalk on southside of McCann, opposite Bell Ranch Drive.

NOTES: Depth in feet below ground surface (bgs). Continuous core; Elevation noted is ground surface elevation.

### **ARCADIS** LOG OF BORING MW19 Infrastructure, environment, facilities (Page 4 of 4) Omega Chemical Operable Unit 2 **Date Completed** : May 3, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller Checked By : Ronald Halpern, PG Sampling Method : Core/Simulprobe **Drilling Company** : WDC Diameter . 6" Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene **Blow Count** Well: MW19 Recovery % GRAPHIC Depth Samples Elev.: 158.94 Time OVA uscs DESCRIPTION Feet Lab No. 60 65 2" Dia. Sch. 80 PVC Sch 80 (0.020" Slotted Screen) Same as above. SP OC2-PMW19 16:25 W-0-3 #2/16 Sand (68-75' Core) Poorly graded SAND, fine to medium grained (max 1 mm diameter), olive (5Y 5/4), wet. 70 OMMON/MTech5\Omega Chemical\MW-19.BOR 2" Dia. Sch. 80 PVC Blank 75 (75-76' Core) Silty CLAY; stiff, brown (10YR 4/3), moist. CL Bottom of boring at 76'.

DESCRIPTION OF BORING LOCATION: In sidewalk on southside of McCann, opposite Bell Ranch Drive.

NOTES: Depth in feet below ground surface (bgs). Continuous core; Elevation noted is ground surface elevation.

#### **ARCADIS** LOG OF BORING MW20 Infrastructure, environment, facilities (Page 1 of 8) **Date Completed** Omega Chemical Operable Unit 2 : May 22, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Jeremy Cook Driller Checked By : Ronald Halpern Sampling Method : Core/Simulprobe **Drilling Company** Diameter : 10" Drill Rig : SpeedStar 30K Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW-20A Well2: MW-20B Well3: MW-20C Blow Count GRAPHIC Recovery Depth Elev.: 141.99 Time OVA DESCRIPTION Feet Lab No. Cover 0 SILT/SILT with Sand and Gravel, ~10-15% Surface medium to coarse sand and fine gravel (1-10 mm diameter) reddish brown, dry. 5 ML (8') Same as above. 10 95% Portland Cement/5% Benseal Poorly graded SAND; predominantly very fine and fine-grained ~3-5% medium to 2" Dia Sch 80 PVC Blank coarse sand, ~3-5% fine gravel (to 10 mm diameter); reddish brown, slightly moist. SP 15-Well graded SAND, fine to coarse, subrounded grains (max 5 mm diameter). 20

PMW-20 is in th sidewalk on east side of Geary Road in Santa Fe Springs, adjacent to the southwest corner of Cascade Water Pumps facility. Directly to the east is a oil field with 6 wells.

SW

Elevation noted is ground surface. A = Shallow; B = Intermediate; C = Deep

OMMON\MTech5iOmega Chemical\MW-20.BOR



Infrastructure, environment, facilities (Page 2 of 8) Omega Chemical Operable Unit 2 **Date Completed** : May 22, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Jeremy Cook Driller Checked By : Ronald Halpern Sampling Method : Core/Simulprobe **Drilling Company** : WDC Diameter : 10" Drill Rig : SpeedStar 30K Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW-20A Well2: MW-20B % Well3: MW-20C **Blow Count** GRAPHIC Recovery Samples Depth Elev.: 141.99 Time OVA in DESCRIPTION Feet Lab No. 25 SW 30-Poorly graded SAND: medium to coarse, poorly graded, subangular-subrounded. 35-95% Portland Cement/5% Benseal 2" Dia Sch 80 PVC Blank 40 SP Ended 5/17/06. 45 Poorly graded SAND with GRAVEL, fine to medium sand;, appears to be increasing in moisture content.

PMW-20 is in th sidewalk on east side of Geary Road in Santa Fe Springs, adjacent to the southwest corner of Cascade Water Pumps facility. Directly to the east is a oil field with 6 wells.

Elevation noted is ground surface. A = Shallow; B = Intermediate; C = Deep

OMMONIMTech5\Omega Chemical\Mw-20.BOR



(Page 3 of 8)

Omega Chemical Operable Unit 2

Date Completed

: May 22, 2006

OVA Driller : MiniRae

Project No. CA000646.0001

Logged By Checked By : Jeremy Cook : Ronald Halpern

Sampling Method

: Core/Simulprobe

**Drilling Company** Drill Rig

: WDC

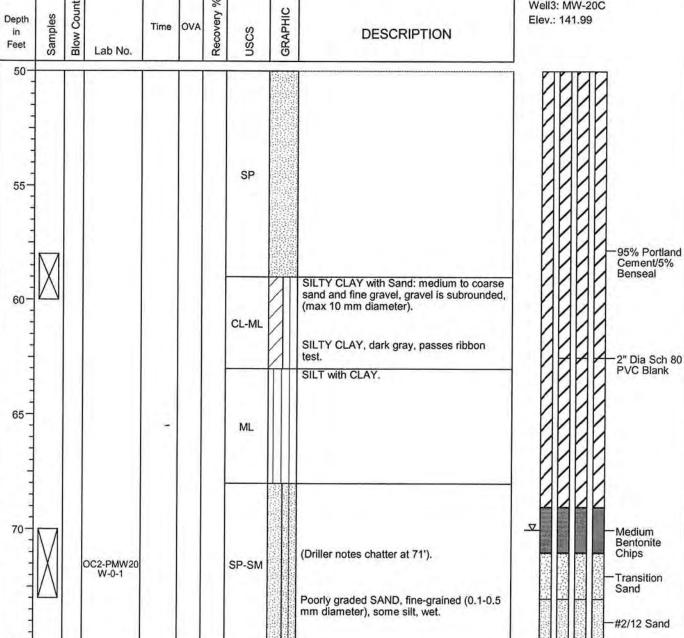
Diameter

: 10"

: SpeedStar 30K Mud Rotary

Calibration Gas/Conc : 100 ppm isobutylene

Well1: MW-20A Well2: MW-20B Well3: MW-20C Depth Elev.: 141.99 Time OVA in



PMW-20 is in th sidewalk on east side of Geary Road in Santa Fe Springs, adjacent to the southwest corner of Cascade Water Pumps facility. Directly to the east is a oil field with 6 wells.

Elevation noted is ground surface. A = Shallow; B = Intermediate; C = Deep

OMMONIMTech5\Omega Chemical\Mw-20.BOR

#### **ARCADIS** LOG OF BORING MW20 Infrastructure, environment, facilities (Page 4 of 8) Date Completed OVA Omega Chemical Operable Unit 2 : May 22, 2006 : MiniRae Project No. CA000646.0001 Logged By : Jeremy Cook Driller Checked By : Ronald Halpern Sampling Method : Core/Simulprobe **Drilling Company** Diameter : 10" Drill Rig : SpeedStar 30K Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW-20A Well2: MW-20B % Well3: MW-20C Blow Count GRAPHIC Recovery Depth Elev.: 141.99 Time OVA uscs DESCRIPTION in Feet Lab No. 75 80 OC2-PMW20 W-1-2 OC2-PMW20 W-0-3 13:00 2" Dia PVC Sch 80 (0.020" Slotted Screen Poorly graded SAND with Silt; fine-grained, wet. SP-SM 85-#2/12 Sand 2" Dia Sch 80 PVC Blank 90 OC2-PMW20 W-0-5 15:30 2" Dia Sch 80 PVC with

Non plastic SILT, dark olive brown, moist.

Threaded End Cap

1:1 Bentonite Crumble/ Sand #3

PMW-20 is in th sidewalk on east side of Geary Road in Santa Fe Springs, adjacent to the southwest corner of Cascade Water Pumps facility. Directly to the east is a oil field with 6 wells.

ML

Elevation noted is ground surface. A = Shallow; B = Intermediate; C = Deep

:OMMON/MTech5/Omega Chemical/MW-20.BOR

95



2" Dia PVC Sch 80 (0.020' Slotted Screen

(Page 5 of 8) Omega Chemical Operable Unit 2 **Date Completed** : May 22, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Jeremy Cook Driller Checked By : Ronald Halpern : Core/Simulprobe Sampling Method **Drilling Company** : WDC Diameter : 10" Drill Rig : SpeedStar 30K Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW-20A Well2: MW-20B % Well3: MW-20C Blow Count GRAPHIC Recovery Samples Elev.: 141.99 Depth OVA Time DESCRIPTION Feet Lab No. 100 ML OC2-PMW20 W-0-6 16:40 Poorly graded SAND with Clay, fine-grained. Resume 5/19/06 SP-SC 105 Chatter from ~105-110, possible Gravel. 1:1 Bentonite Crumble/ SP Sand #3 110 2" Dia Sch 80 **PVC Blank** (111-113' Simulprobe) Poorly graded SAND, fine-grained, olive (5Y 4/3), wet, no odor. OC2-PMW20 9:30 W-0-08 2" Dia Sch 80 **PVC Blank** (113' Shoe) SILTY CLAY, medium stiff to stiff, yellowish brown (10YR 5/4), moist to wet, moderately tough, moderate plasticity, medium dilatency, high dry strength, no 115 CL odor. Medium (117' Off mud return), SAND, poorly Bentonite graded, predominantly fine to DMMONIMTech5lomega ChemicallMW-20.BOR Chips medium-grained. 10:10 120 SP OC2-PMW20 11:35 #2/12 Sand (122-123' Simulprobe) Poorly graded SAND:

~3-5% Silt, ~95-97% predominantly fine to medium Sand (~0.1-2 mm diameter), ~3-5%

coarse Sand (max 5 mm diameter), olive (5Y 4/3), saturated, sand subrounded, ~10-20% mafic minerals, ~60-70% quartz,

-20-30% plags.

PMW-20 is in th sidewalk on east side of Geary Road in Santa Fe Springs, adjacent to the southwest corner of Cascade Water Pumps facility. Directly to the east is a oil field with 6 wells.

Elevation noted is ground surface. A = Shallow; B = Intermediate; C = Deep

W-0-11

125



(Page 6 of 8)

Omega Chemical Operable Unit 2

Feet

135

140

145

150

Date Completed

: May 22, 2006

OVA

: MiniRae

Project No. CA000646.0001

Logged By Checked By : Jeremy Cook : Ronald Halpern

: SpeedStar 30K Mud Rotary

Driller Sampling Method

: Core/Simulprobe

**Drilling Company** Drill Rig

: WDC

Diameter

: 10"

Calibration Gas/Conc : 100 ppm isobutylene

**Blow Count** Recovery GRAPHIC Depth Time OVA **NSCS** 

DESCRIPTION

Well1: MW-20A Well2: MW-20B Well3: MW-20C Elev.: 141.99

Lab No. 125 (Off mud return at ~127'): Poorly graded SP SAND - as above. 12:00 130-OC2-PMW20 W-0-12 13:35 SW

SP-SM

ML-SM

SW

(130-133' Simulprobe) Well graded SAND: ~3-5% Silt, fine to coarse Sand (95%), trace fine gravel (max 10 mm diameter), subrounded, ~25% mafic, ~50-70% quartz, 15-25% plag and other, saturated, no odor.

(133' in Shoe) Poorly graded SAND with SILT, ~5-10% Silt, 90-95% fine grained sand, olive (5Y 4/3), wet.

SANDY SILT, possible change to Silt from mud return.

(142-143' Simulprobe) Poorly graded Sandy non-plastic SILT/SILTY SAND, ~40-60% Silt ~60-40% fine Sand, (max diametger ~0.3 mm), olive gray (5Y 4/2), with strong brown (7.5Y 4/6 to 5/6) oxidation staining on horizontal planes, wet, micaceous.

(148-149' Mud Return) Well graded SAND, fine to coarse grained (max diameter 5 mm), ~20-30% mafic, 20-30% plag, ~5 ortho, 35-55% quartz, subangular, speckled black, white, olive brown, saturated

2" Dia PVC Sch 80 (0.020" Slotted Screen

#2/12 Sand

2" Dia Sch 80 PVC with Threaded End Cap

2" Dia Sch 80 PVC Blank

1:1 Bentonite Crumble/ Sand #3

PMW-20 is in th sidewalk on east side of Geary Road in Santa Fe Springs, adjacent to the southwest corner of Cascade Water Pumps facility. Directly to the east is a oil field with 6 wells.

Elevation noted is ground surface. A = Shallow; B = Intermediate; C = Deep

14:25

OC2-PMW20 5/19/06 W-0-14 5/22/06

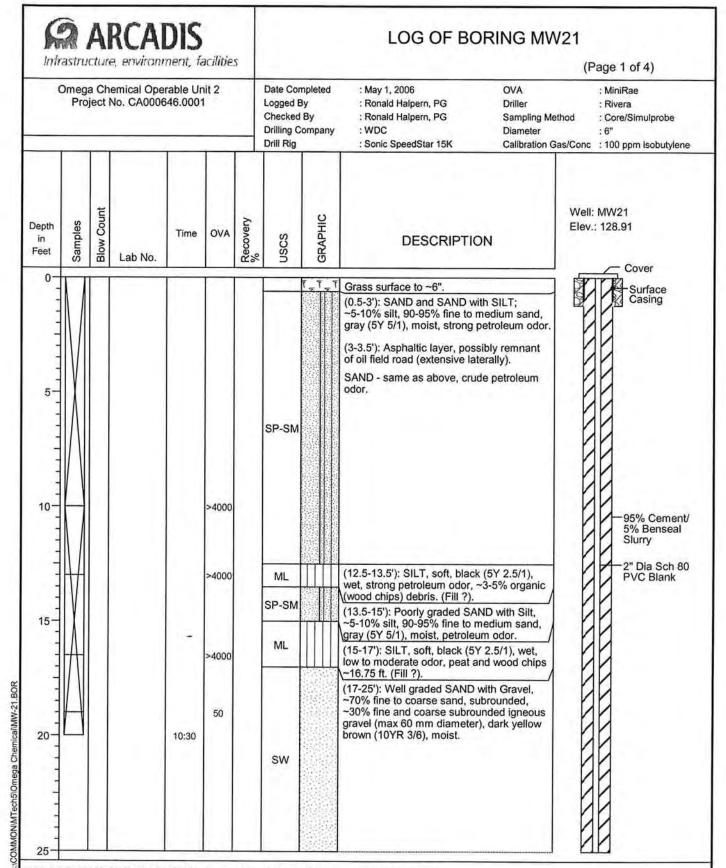
OMMONIMTech5/Omega Chemical/MW-20.BOR

#### **ARCADIS LOG OF BORING MW20** Infrastructure, environment, facilities (Page 7 of 8) **Date Completed** : May 22, 2006 OVA : MiniRae Omega Chemical Operable Unit 2 Project No. CA000646.0001 Logged By : Jeremy Cook Driller Checked By : Ronald Halpern Sampling Method : Core/Simulprobe **Drilling Company** : WDC Diameter : 10" Drill Rig : SpeedStar 30K Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW-20A Well2: MW-20B Well3: MW-20C **Blow Count** GRAPHIC Recovery Elev.: 141.99 Depth Time OVA DESCRIPTION Feet Lab No. 150 OC2-PMW20 W-0-16 9:15 SW (Shoe of Simulprobe and mud return) (153') CLAY with Sand, lean, ~10-20% fine to medium Sand, ~80-90% Silty Clay, dark OC2-PMW20 9:15 greenish gray (Gley 1 4/1), wet. 155 ML 160 9:50 (161.5-162.5' Simulprobe) SILT with Clay, 11:32 None hard, dark greenish grey (Gley 1 4/1), moist, moderately plastic. 1:1 Bentonite Crumble/ (162.5-163') Silty CLAY, hard, dark Sand #3 greenish gray, moist, moderately plastic. 2" Dia Sch 80 PVC Blank 165 CL At 168' off mud return - same as above. 170 (171.5-173 Simulprobe) SILT with Clay, stiff (fingernail impression), dark greenish gray 13:35 None ML (Gley 1 4/1), moist, low plasticity.

PMW-20 is in th sidewalk on east side of Geary Road in Santa Fe Springs, adjacent to the southwest corner of Cascade Water Pumps facility. Directly to the east is a oil field with 6 wells.

Elevation noted is ground surface. A = Shallow; B = Intermediate; C = Deep

#### **ARCADIS** LOG OF BORING MW20 (Page 8 of 8) **Date Completed** Omega Chemical Operable Unit 2 : May 22, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Jeremy Cook Driller : Ronald Halpern Checked By Sampling Method : Core/Simulprobe **Drilling Company** : WDC Diameter : 10" Drill Rig : SpeedStar 30K Mud Rotary Calibration Gas/Conc : 100 ppm isobutylene Well1: MW-20A Well2: MW-20B Well3: MW-20C **Blow Count** GRAPHIC Recovery Samples Elev.: 141.99 Depth OVA Time uscs in DESCRIPTION Feet Lab No. 175 1:1 Bentonite ML Crumble/ Sand #3 2" Dia Sch 80 **PVC Blank** 180 14:26 OC2-PMW20 W-0-18 15:47 (181.5-183 Simulprobe) Poorly graded SAND, ~3-5% Silt, ~95-97% fine to medium Sand (max 2 mm diameter), dark greenish gray to dark greenish black (Gley 1 3/1 to 2.5/1), wet. 185 2" Dia PVC Sch 80 (0.020' Slotted Screen SP #2/12 Sand At 187' off mud return - same as above. 190 2" Dia Sch 80 OMMONIMTech5lOmega Chemical/MW-20.BOR 16:25 PVC with At 193' off mud return - same as above. Threaded End Cap SM (194-194.75' Simulprobe) Well graded Silty SAND w/gravel and clay, ~20-25% coarse gravel (~15-25 mm dia., subangular-subrounded igneous), ~50-60% fine to coarse sand, ~20-25% dark greenish gray 195 silt with clay (Gley 1 3/1) matrix. (194.75-195' Shoe) Silty CLAY, ~5-10% fine to medium sand in a silty clay matrix, stiff, dark greenish gray to greenish black (Gley 1 3/1-2.5/1), moist. 200 Bottom of boring 195'. PMW-20 is in th sidewalk on east side of Geary Road in Santa Fe Springs, adjacent to the southwest corner of Cascade Water Pumps facility. Directly to the east is a oil field with 6 wells. Elevation noted is ground surface. A = Shallow; B = Intermediate; C = Deep



DESCRIPTION OF BORING LOCATION: On west side of Pioneer Blvd., in green belt in front of 9929 Pioneer Blvd., ~4 feet from curb.



(Page 2 of 4)

Omega Chemical Operable Unit 2 Project No. CA000646.0001

**Date Completed** 

Logged By Checked By **Drilling Company**  : May 1, 2006 : Ronald Halpern, PG : Ronald Halpern, PG OVA Driller Sampling Method : MiniRae : Rivera

Diameter

: Core/Simulprobe

Drill Rig

: WDC : Sonic SpeedStar 15K

Calibration Gas/Conc : 100 ppm isobutylene

			T	1	1				
Depth in Feet S	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well: MW21 Elev.: 128.91
30-						SW-SM		(~25-36'): Well graded SAND with SILT, ~5% fine subangular gravel (max 15 mm diameter), ~15% silt, ~80% fine to coarse sand, (maximum 5 mm diameter), subangular, cemented, hard, light olive brown (2.5Y 5/4), dry.	
35						sw		(36-38'): Well graded SAND with Gravel, ~20% predominantly fine subangular, igneous gravel (max 8 mm diameter), ~80% fine to coarse sand (max 5 mm diameter), subangular, olive brown (2.5Y 4/3), dry.	95% Cement/ 5% Benseal Slurry 2" Dia Sch 80 PVC Blank
40-			11:10			CL-CH	M)	(38-40'): Fat CLAY, medium stiff, olive brown (2.5Y 4/3), moist to wet, some black organic staining (crude?), positive ribbon test, moderate toughness, no dilatency,	
45						SP		high plasticity, high dry strength.  (40-48'): Poorly graded SAND, fine-grained, trace Silt, light olive brown (2.5Y 5/3), slightly moist.	
=   \						SW ML-SM		(48-49.5'): Cemented, well graded SAND with Gravel, ~5% Silt, 85% fine to coarse sand, ~10% fine subangular igneous gravel, hard, light olive brown (2.5Y.5/6).	

slightly moist, no odor DESCRIPTION OF BORING LOCATION: On west side of Pioneer Blvd., in green belt in front of 9929 Pioneer Blvd., ~4 feet from curb.

			e, <i>environn</i>				Date Cor	mnleted	: May 1, 2006	OVA	- 17	e 3 of 4) iniRae
	Pro	ject N	emical Oper No. CA0006	46.0001	1		Logged E Checked Drilling C Drill Rig	By By	: Ronald Halpern, PG : Ronald Halpern, PG : WDC	Driller Sampling Metho Diameter	: R od : C : 6"	ivera ore/Simulprobe
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION		Well: MV Elev.: 12	1
50	П			12:50			ML-SM					
-	11						SM		(50.5-52'): Well graded Silty SANI silt, 70-75% fine to coarse rounde	d Sand	100	
-	$\  \ $						SP		(max 5 mm diameter), ~10% fine igneous Gravel, dense, olive brow 4/3), wet (due to cleanout water), org staining (no odor)	m (2.5Y		-95% Cement/ 5% Benseal
55-	$\ $						CL		(52-54'): Poorly graded SAND, ~3 and coarse subrounded igneous C (max 70 mm diameter), brown (7.5	Gravel		Slurry
-	$\  \ $						ML-SP		dry. (54-56'): Interbedded CLAY and C SAND (with iron staining), clay stif	CLAYEY ff (<1/4"	DE	─2" Dia Sch 80 PVC Blank
60-									penetration). (56-57'): SILT/Poorly graded SANI (57-58'): Poorly graded SAND, find medium grained (maximum 1 mm brown.	e to		
							SP					
65									Wet at 66 feet.		<b>-</b>	
3	$\bigvee$			15:00			sw		(68-69' Split Spoon): Well graded ~3-5% silt, 95-97% fine to coarse	SAND,		-#2/12 Sand Pa
70-	V	d	OC2-PMW21 W-0-03	5/1/06 8:15					(maximum 5 mm diameter), subro dense, yellowish brown (10YR 5/4 occasional subangular to subround igneous fine and coarse gravel (m. 28 mm diameter).	unded, ), wet, ded		-2" Dia Sch 80 PVC w/0.02" Slotted Screen
	$\bigvee$						SP		(69-76'): Porly graded SAND, ~3- subangular to subrounded, igneou coarse gravel (maximum 50 mm d 95-97% fine to medium sand (max mm diameter), yellow brown (10YF wet.	is, fine to liameter), kimum 1.5	¥	

DESCRIPTION OF BORING LOCATION: On west side of Pioneer Blvd., in green belt in front of 9929 Pioneer Blvd., ~4 feet from curb.

#### **ARCADIS** LOG OF BORING MW21 Infrastructure, environment, facilities (Page 4 of 4) Omega Chemical Operable Unit 2 **Date Completed** : May 1, 2006 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Rivera Checked By : Ronald Halpern, PG Sampling Method : Core/Simulprobe : 6" **Drilling Company** : WDC Diameter Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene OC2-PMW21 W-0-03 8:15 Well: MW21 Blow Count GRAPHIC Recovery % Depth Elev.: 128.91 Time OVA in DESCRIPTION Feet Lab No. 75 SP (76-78.5'): Well graded SAND with Gravel, ~3-5% Silt, ~15-20% fine subrounded 2" Dia Sch 80 OC2-PMW21 9:55 (granitic) gravel (max 8 mm diameter), SW PVC w/0.02" W-0-05 ~75-80% fine to coarse sand, grayish Slotted Screen brown (10YR 5/2), wet. #2/12 Sand Pack (78.5-81'): Poorly graded SAND, fine grained (maximum 0.5 mm), olive brown 80 SP (2.5Y 4/3), wet. 2" Dia Sch 80 PVC Blank (81-85.5'): Non plastic SILT, medium stiff, light olive brown (2.5Y 5/4), moist, low to toughness, low plasticity, moderate dilatency, low dry strength. ML Medium Chips Threaded End Cap 85 SP-SM (85.5-86'): Poorly graded SAND with Silt, ~5-10% Silt, ~90-95% predominantly fine sand, with ~3-5% medium grained (maximum 2 mm diameter), occasional fine gravel (maximum 6 mm diameter), olive brown (2.5Y 5/4), moist. 90 Bottom of boring at 86'. COMMONIMTech5iOmega Chemical\MW-21.BOR 95 100

DESCRIPTION OF BORING LOCATION: On west side of Pioneer Blvd., in green belt in front of 9929 Pioneer Blvd., ~4 feet from curb.

# ARCADIS Infrastructure, environment, facilities

# LOG OF BORING MW-22

(Page 1 of 4)

									Λ.	age 1 01 4)
0		a Chemical ect No. CA			2	Logg	Complet ged By cked By ng Comp Rig	: Ronald Halpern : Ronald Halpern	OVA Driller Drilling Method Diameter Calibration Gas/Conc	: MiniRae : : Sonic : 6" : 100 ppm isobutylene
Depth In Feet	Samples	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well: N Elev.:	
0-							9 9 9	0.11.00	e and a	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	$\bigvee$		4/24/06			SM		Sod to ~6".  SILTY SAND, ~20-30% Silt, ~70-t sand, soft, brown to reddish brown rootlets (Fill).		Surface Casing
5-	$\langle \cdot \rangle$		4/25/06 9:40					Post hole to 5 ft. SILTY SAND with CLAY, CLAYE's with SILT, ~60-80% fine Sand, ~2 and clay, medium stiff, dark brown	0-40% silt	
	$\bigvee$		9:55			SM-SC		8/2), moist.  Same as above.	I I	
10-	I/ \II					SP		(10-10.67') Poorly graded SAND,	fine-grained	95% Portland
1	V VI							(max. 0.5 mm diameter), dark yell brown (10YR 4/6), slightly moist.	owish	Cement/5% Bens Slurry
-	$\vdash$					ML		(10.67-12.5') Non plastic SILT, me	edium stiff,	
1	M					SP		friable, ollive brown (2.5Y 4/4), mo (12.5-14') Poorly graded SAND, fi yellowish brown (10YR 5/4), moist	ne-grained,	2" Dia Sch 80 PVC Blank
-	V		2.50	1		ML		(14-14.67') SILT, stiff to hard, olive		
15-			10:10	_	×	SP-SM		(2.5Y 4/4), slightly moist, low to m toughness, low to medium plastici	ty, low dry	
1	I/MI					ML-		strength.	2415	
-						SP		(14.67-15') Poorly graded SILTY S SAND with SILT, ~10-20% silt, 80 sand, (max. 0.5 mm diameter), oli (2.5Y 4/3), slightly moist.	-90% fine	
20-	$\bigvee$		,			SM		(15-15.3') SILT with CLAY, hard, s moist, brown (10YR 4/3), mottled oxidation stains, low toughness, m plasticity, low dry strength, and ye brown, horizontal lamina.	with nedium	
-			11:00					(15.3-16.3') Poorly graded SAND, medium grained, (max 1 mm diam olive brown (2.5Y 5/4), slightly mo	neter), light ist.	
25						SP		(16.3-16.7') Poorly graded SILTY ~20-30% silt, 80-90% fine to low e sand (max 1 mm diameter) hard, (semiconsilidated) brown (10YR 4 moist, mottled with oxidation stain	end medium friable, /3), slightly	



(		a Chemical ect No. CAI			2	Logg Chec	Complet ed By ked By ng Compa	: Ronald Halpern : Ronald Halpern	OVA Driller Drilling Method Diameter Calibration Gas/C	: MiniRae : : Sonic : 6" Conc : 100 ppm isobutylene
Depth in Feet	Samples	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	1000	ell: MW-22 ev.: 151.36
25-						SP-ML SP-SM		(23-26') Poorly graded SAND, fine mm diameter), light olive brown (2. slightly moist, trace fine and coarse size rounded, nodules consolidated (26-26.5') Poorly graded SAND/SIL fine sand bordering silt, olive brown	SY 5/3), e gravel I sand. T; very	
30-	$\left  \right $		11:00			SM-SS		slightly moist, consolidated.  (26.5-29') Well graded SAND with 0 ~3-5% silt, ~25% fine and coarse g (sedimentary) ~70% well-graded fir coarse sand (max 5 mm diameter), gray (5Y 6/2), slightly moist.  (29-30') Poorly graded SILTY SANI	GRAVEL, ravel ne to light olive	
11111						SW-SM		~20-30% silt, ~10-15% med-coarse ~55-70% fine sand consolidated, had grayish brown (2.5Y 4/2), moist, tragravel (3-5%). (30-33') Well graded SAND with GF	e sand, ard, dark ce fine	
35-						SP		~60-70% fine to coarse sand (max diameter), subangular, ~30-40% fine coarse subrounded to subangular g (max 60 mm diameter), light yellow (2.5Y 6/3), slightly moist, gravel ign wet.	5 mm le and gravel ish brown	95% Portland Cement/5% Bens Slurry
40-	$\left  \right $		11:55	-		SW-SM		(33-34') Well graded SAND with SII GRAVEL, ~5-10% sllt, ~60% fine to sand (max 5 mm diameter), ~30% coarse subangular to angular grave mm diameter), light brownish gray (slightly moist, gravel is consolidated sedimentary (Sand and Silty Sand). (34-38.5') Poorly graded SAND,	o coarse fine and of (max 30 (2.5Y 6/2),	PVC Blank
								predominantly fine to medium (max diameter) sand, ~5-10% coarse sar fine subrounded gravel, light olive b slightly moist.	nd, 3-5% rown,	
45-	V		13:10			SP		(38.5-43') Well graded SAND with 0 fragmented sand stone, ~5-10% silline to coarse sand (max 5 mm diar ~40% fine gravel size subangular to rock chips (sedimentary).	t, ~50% neter),	
	$\left  \right  $					sw		(43-47.5') Poorly graded SAND, ~5- subrounded fine and coarse gravel and metamorphic), ~90-95% fine to sand, slightly moist, increasing grai- coarse like gravel.	(igneous medium	

#### **ARCADIS** LOG OF BORING MW-22 Infrastructure, environment, facilities (Page 3 of 4) Date Completed : April 27, 2006 OVA : MiniRae Omega Chemical Operable Unit 2 Logged By : Ronald Halpern Driller Project No. CA000646.0001 Checked By : Ronald Halpern **Drilling Method** : Sonic **Drilling Company** : WDC Diameter : 6" Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW-22 **SRAPHIC** Recovery % Depth Elev.: 151.36 OVA Time DESCRIPTION Feet Lab No. 50 (47.5-53.5') Well graded SAND with GRAVEL ~20-30% subangular to subrounded igneous gravel (max 40 mm diameter), ~70-80% fine to coarse sand (max 5 mm diameter), light SW yellowish brown (2.5Y 6/4), slightly moist. 13:10 Same as above, light gray (2.5Y 7/2), Gravel fine to coarse (max 20 mm diameter). (54.5-55.5') Non plastic SILT with SAND -55 ML SANDY SILT, ~25-35% med-coarse sand (max 5 mm diameter), ~65-75% silt, hard, SP yellowish brown (10YR 5/4), moist, consolidated, trace fine angular gravel 95% Portland Cement/5% Benseal 15:05 (56-57') Poorly graded SAND, predominantly fine to medium grained, hard, (consolidated), pale olive (5Y 6/3), moist. Slurry SP-SM/SW-SM (57-60) Poorly to well graded SAND with SILT, ~5-10% silt, 50-60% fine sand. 60 ~30-40% coarse sand (max 5 mm diameter), ML pale olive (5Y 6/3), slightly moist. (60-61') SILT with SAND, ~15-20% medium to coarse sand (max 5 mm diameter), trace fine 2" Dia Sch 80 gravel (max 8 mm diameter), ~80-85% silt **PVC Blank** borderline v. fine sand, light olive brown SW-SM (2.5Y 5/4), dry, occasional coarse gravel (to 30 mm diameter). (61-63') Well graded SAND with SILT, 65 -5-10% fine subrounded igneous gravel (max 8 mm diameter), ~10-20% silt, ~70-85% fine to coarse sand; light yellowish brown (2.5Y SW 6/3), dry, increasing gravel to ~15% by 62.5 feet, gets moist to wet by 64 feet, consolidated. OC2-PMW22 W-0-04 4/26/06 10:42 COMMONIMTech5lOmega Chemical/MW-22.BOR Poorly graded SILTY SAND, ~20% silt, 80% OC2-PMW22 10:43 fine sand, hard (fragmented), brown, wet at W-1-05 Medium Chips 66 feet. 70 (66-76') Poorly graded SAND, fine to medium SP (max 1 mm diameter), dark olive brown (2.5Y 3/3), wet, occasional coarse gravel (subrounded gneiss and/or igneous max 60 11:30 mm), micaceous sand with biotite and mafic minerals. #2/16 Sand Pack 2" Dia. PVC Sch 80 (0.020" Slotted Screen) DESCRIPTION OF BORING LOCATION: On east side of Arlee, just north of Terradell, ~3 1/2 ft. in from curb.

#### **ARCADIS** LOG OF BORING MW-22 Infrastructure, environment, facilities (Page 4 of 4) **Date Completed** : April 27, 2006 OVA : MiniRae Omega Chemical Operable Unit 2 Logged By : Ronald Halpern Driller Project No. CA000646.0001 Checked By : Ronald Halpern **Drilling Method** : Sonic **Drilling Company** : WDC Diameter : 6" Drill Rig : Sonic SpeedStar 15K Calibration Gas/Conc : 100 ppm isobutylene Well: MW-22 **SRAPHIC** Recovery % Depth Elev.: 151.36 OVA Time DESCRIPTION Feet Lab No. 75 (76-88') Same as above - increasing grain size - predominantly, fine to medium (0.1 to 2 mm), occasional coarse sand (up to 4 mm 13:40 OC2-PMW22 diameter), occasional coarse subrounded w-0-06 igneous Gravel (max 30 mm diameter). 80 SP 2" Dia. PVC Sch 80 (0.020" Slotted Screen) #2/16 Sand Pack 85 15:00 OC2-PMW22 W-0-07 16:40 ML (88-88.5') Non plastic SILT, stiff, light olive 4/27/06 brown, moist. (88.5-91') Poorly graded SAND, fine to SP 90 medium (max 2 mm diameter). (91-92') SILT borderline SILTY SAND v. fine ML-SM 2" Dia Sch 80 Sand <0.1 mm with ~5-10% ~0.1-0.2 mm 9:00 **PVC Blank** diameter sand, hard, olive brown, moist to wet, laminar black (organic?) layers, COMMONIMTech5lOmega Chemical/MW-22.BOR SP horizontal separation. (92-94') Poorly graded SAND, fine to medium Threaded End Cap grained (max 2 mm diameter). 95 ML Medium Chips (94-96') Non plastic SILT, ~3-5% fine sand, -95-97% silt, medium stiff, friable, olive brown (2.5Y 4/3), moist, horizontal laminations. Bottom of boring at 96'. 100 DESCRIPTION OF BORING LOCATION: On east side of Arlee, just north of Terradell, ~3 1/2 ft. in from curb.



# Well Number: MW-23A

Sheet: 1 of 2

**Driller:** Boart Longyear **Drilling Method:** Rotosonic

Client: U.S. EPA Drilling Method: Rotosonic
Project: Omega Chemical OU-2 Sampling Method: Continuous Core

Location: Beasor Dr. & Burke St., Santa Fe Springs, CALogged by: J. Ockerman

**Project Number: 335392.Fl.01 Start/Finish Date:** 5/16/07 to 5/17/07

$\vdash$	Sam			Jei. 333392.i i.01	1		
	In						
Depth (ft)	Time	OVA	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
0-	1030			Ground Surface			
- -		0.0		SILT (ML) very dark grayish brown (2.5 Y 3/2), moist, stiff	2	nco box	Hand Auger to 5' bgs
5-				SANDY LEAN CLAY (CL) dark yellowish brown (10 YR 4/6), moist, stiff	5	12" Flush-mounted Emco box	
- - -	1050	0.0		LEAN CLAY (CL) dark grayish brown (10 YR 4/2), moist, 90% fines, 5% fine sand, very stiff	10	12" Flust	
15— - -						Tonite No House	
20-	1110	0.0		LEAN CLAY (CL) as above	18	ut 5% Ber √C	
-				LEAN CLAY (CL) as above, except soft, low plasticity	22		
25-				LEAN CLAY (CL) dark grayish brown (10 YR 4/2), moist, 90% fines, 10% fine sand, very stiff	24	Portland Cement 5% Bentonite	
30-	1130	0.0		POORLY GRADED SAND WITH SILT (SP-SM	32	chips	
35-				brown (10 YR 5/3), moist, 90% medium sand, 10% fines		Medium bentonite chips	Depth to water at 35' bgs
40-	1145	0.0		POORLY GRADED SAND (SP) as above, 10% rounded gravel up to 30 mm	38	Medic	
45— - -					10	50,0	
50 –	1150	0.0		POORLY GRADED SAND (SP) as above	48	<u>                                     </u>	



# Well Number: MW-23A

Sheet: 2 of 2

**Driller:** Boart Longyear **Drilling Method:** Rotosonic

Client: U.S. EPA Drilling Method: Rotosonic
Project: Omega Chemical OU-2 Sampling Method: Continuous Core

Location: Beasor Dr. & Burke St., Santa Fe Springs, CALogged by: J. Ockerman

**Project Number: 335392.Fl.01 Start/Finish Date:** 5/16/07 to 5/17/07

	Sample					<b>31 mon Bator</b> 6, 16, 67, 16 6, 17, 67	
Depth (ft)	Time	OVA O	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
55	1205	0.0		POORLY GRADED SAND WITH GRAVEL (SP brown (10 YR 5/3), wet, 70% medium to coarse sand, 30% subrounded gravel up to 60 mm	58	No. 3 sand a language and a language	
70 — - - - -	1310	0.0		SANDY LEAN CLAY (CL) brown (10 YR 4/3), wet, 60% fines, 40% fine sand, stiff  End of Log	68		
75 — - - -							
80-							
85— - -							
90-							
95 — - - - 100 —							

#### **ARCADIS** LOG OF BORING MW23 (Page 1 of 8) Omega Chemical Operable Unit 2 Date Completed : May 20, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Mark Green Checked By : Ronald Halpern, PG Sampling Method : Core/Simulprobe **Drilling Company** : WDC Diameter : 9 3/4 inches Drill Rig : Faline Star SOK-CH ARCH/Mud Calibration Gas/Conc : 100 ppm isobutylene Well1: MW23B Well2: MW23C Well3: MW23D **Blow Count** GRAPHIC Recovery % Depth Elev.: 149.35 Time OVA in DESCRIPTION Feet Lab No. Cover 0 Sod Surface 5/16/05 @ 16:00 Casing 5 10-95% Portland Cement 5% Volclay ML 2" Dia. 16:05 0.2 (Off cyclone cuttings). SILT with Clay; Sch. 80 PVC olive brown, wet, very soft, no odor. 15 2" Dia. Sch. 80 PVC OMMON\MTech5\Omega Chemical\MW-23.BOR 20-16:10 (Off cyclone). Same as above. In greenbelt on the northeast side of Burke Street, just northwest of Beasor Road (near PPO34). Elevation noted is finished surface grade. B = Intermediate; C = Lower Intermediate; D = Deep



(Page 2 of 8)

Omega Chemical Operable Unit 2

25

**Date Completed** 

: May 20, 2005

OVA Driller : MiniRae

Project No. CA000646.0001

Logged By Checked By

: Ronald Halpern, PG : Ronald Halpern, PG

Sampling Method

: Mark Green : Core/Simulprobe

**Drilling Company** 

: WDC

Diameter

: 9 3/4 inches

Drill Rig

: Faline Star SOK-CH ARCH/Mud Calibration Gas/Conc : 100 ppm isobutylene

Well1: MW23B

Well2: MW23C Well3: MW23D Elev.: 149.35

**Blow Count** GRAPHIC Recovery % Depth Time OVA uscs Feet Lab No.

DESCRIPTION

(Off cyclone). SILTY CLAY, brown (10YR 4/3), moist, soft, no odor; medium

95% Portland Cement 5% Volclay

tough, moderate plasticity, no dilatency. CL 30-16:30 0.3 (Off cyclone). Same as above, dark brown to brown. (Off cyclone). SAND with Silt; approx. 5-10% brown silt; 90-95% fine-grained 16:33 0.2 35 sand; dark brown (10YR 3/3), moist, no SP-SM Groundwater apprx. 37 feet bgs based on water staining on drill rods. (38-40' Off cyclone). Well graded SAND, apprx. 2-5% silt; 95-98% fine to coarse 40 SW sand (max diam. 5 mm), occassional fine gravel (max. diam. 20 mm); brown (10YR OC2-PMW23 16:40 4/4), wet, no odor.

GW

SP

Well graded GRAVEL with Sand; apprx. 30% fine to coarse sand, 70% fine and coarse gravel (max. diam. 30 mm), subrounded igneous (granitic) gravel.

Bentonite Sand Mix

2" Dia. Sch. 80 PVC

2" Dia. Sch. 80 PVC

In greenbelt on the northeast side of Burke Street, just northwest of Beasor Road (near PPO34). Elevation noted is finished surface grade. B = Intermediate; C = Lower Intermediate; D = Deep

5/17/05 7:30

7:40

OMMONIMTech5lOmega ChemicallMW-23.BOR

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(Page 3 of 8)

Omega Chemical Operable Unit 2 Date Completed : May 20, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Mark Green Checked By : Ronald Halpern, PG Sampling Method : Core/Simulprobe **Drilling Company** : WDC Diameter : 9 3/4 inches Drill Rig : Faline Star SOK-CH ARCH/Mud Calibration Gas/Conc : 100 ppm isobutylene Well1: MW23B Well2: MW23C Well3: MW23D Blow Count **SRAPHIC** Recovery % Elev.: 149.35 Depth Samples OVA Time uscs DESCRIPTION Feet Lab No. 50 (~50' Off cyclone). Poorly graded SAND, -95-98% fine to medium grained (max. OC2-PMW23 13:20 2.0 diam. 1 mm), brown, saturated, trace silt, W-0-05 occasional fine and coarse gravel (max. 35 mm diam). (From Simulprobe): Poorly graded SAND with Gravel; ~30% fine to coarse gravel, ~70% fine to medium sand (max. diam. 1.5 mm), brown (10YR 4/3) wet to 55 SP saturated, no odor, Gravel is subangular to subrounded igneous with max. diam. of 25 mm 60-(Off split-spoon). Well graded SAND, 1:1 Bentonite -5% silt, 95% fine to coarse sand (max. OC2-PMW23 13:40 2.2 Sand Mix diam. 5 mm), trace fine gravel (max diam. W-0-07 SW 7 mm), dark grayish brown (10YR 4/2), 16:20 saturated, no odor. 2" Dia. Sch. 80 PVC Well graded GRAVEL with Sand; 60-80% fine and coarse gravel. GW 65 Well graded SAND, fine to coarse, 2" Dia. Sch. 80 brown, saturated. PVC Alternating layers of SP, SW and GW as SW described above, max. diam. 35-40 mm, subangular to subrounded igneous and OMMONIMTech5/Omega Chemical/MW-23.BOR metamorphic (gneiss) gravel. Poorly graded SAND, ~3-5% silt, 95-97% fine to medium sand (max diam 2 mm), 70 brown to dark grayish brown (10YR 17:41 1.9 No Water 4/3-4/4), wet, no odor. ecovery SP

In greenbelt on the northeast side of Burke Street, just northwest of Beasor Road (near PPO34). Elevation noted is finished surface grade. B = Intermediate; C = Lower Intermediate; D = Deep



Infrastructure, environment, facilities (Page 4 of 8) Omega Chemical Operable Unit 2 Date Completed : May 20, 2005 OVA : MiniRae Project No. CA000646.0001 Logged By : Ronald Halpern, PG Driller : Mark Green Checked By : Ronald Halpern, PG Sampling Method : Core/Simulprobe : WDC **Drilling Company** Diameter : 9 3/4 inches Drill Rig : Faline Star SOK-CH ARCH/Mud Calibration Gas/Conc : 100 ppm isobutylene Well1: MW23B Well2: MW23C Well3: MW23D Blow Count Recovery % Samples Elev.: 149.35 Depth OVA Time DESCRIPTION Feet Lab No. 75 5/18/05 1:1 Bentonite 7:50 Sand Mix (Off cyclone). Poorly graded SAND with Silt; ~5-10% brown silt, 90-95% predominately fine to medium sand (max SP-SM 7:55 1.5 diam 1 mm), very dark grayish brown (2.5Y 3/2), saturated, no odor. Driller noted changes in drilling conditions at 79' bgs. 80 SILT, very dense, olive (5Y 4/3), wet, no 90 OC2-PMW23 1.3 Medium Chips odor, rapid dilatency, low toughness, W-0-013 moderate plasticity. Sch. 80 PVC #30 Transition ML Sand 85 Driller felt change in drilling conditions. 2" Dia. Sch. 80 PVC (88-90' Off cyclone). Poorly graded SAND, Sand with Silt; ~3-10% silt, very fine to fine sand (max 0.2 mm), speckled #2/16 Sand brown and black, saturated, no odor, 2" Dia. 90 SP-SM micaceous. Sch. 80 OC2-PMW23 13:25 PVC W-0-16 14:28 1.1 (Split-spoon). Poorly graded SAND, fine 2" Dia. PVC grained (max 0.5 mm), very dense, olive brown (2.5 YR 4/3), saturated, OMMONIMTech5\Omega Chemica\\MW-23.BOR Sch 80 (0.020"SP micaceous, mafic gravels. Slotted Screen) 95 (Off cyclone). Poorly graded GRAVEL GP with Sand, ~80% fine gravel (max 18 mm), ~20% coarse sand, saturated, 14:48 subrounded, igneous. (Off cyclone). SILT, brown, saturated. ML 2" Dia. Sch. PVC Blank 100

In greenbelt on the northeast side of Burke Street, just northwest of Beasor Road (near PPO34). Elevation noted is finished surface grade. B = Intermediate; C = Lower Intermediate; D = Deep

AGA7-200R



(Page 5 of 8)

Omega Chemical Operable Unit 2

Date Completed

: May 20, 2005

OVA

: MiniRae

Project No. CA000646.0001

Logged By Checked By : Ronald Halpern, PG : Ronald Halpern, PG Driller Sampling Method : Mark Green : Core/Simulprobe

Drilling Company

: WDC

Diameter

: 9 3/4 inches

Drill Ria

: Faline Star SOK-CH ARCH/Mud Calibration Gas/Conc

				-		1	Drill Rig	1	: Faline Star SOK-CH ARCH/Mud Calibratio	on Gas/Conc : 100 ppm isobutylene
Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well1: MW23B Well2: MW23C Well3: MW23D —#2/16 Sand Elev.: 149.35
100				15:38	0.3	No Water Sample	ML		(101-102' from split spoon). SILT, very stiff (<1/4" penetration); olive brown (2.5 YR 4/3), moist, no odor, rapid dilatency, moderate toughness, low plasticity, low liquid limit, low dry strength.	3/4" Bentonite Chips -2" Dia. Sch. PVC Blank
110	X	100		16:15	0.1	No Water Sample			SILTY CLAY, stiff to very stiff (~1/4" penetration), olive brown (2.5 YR 4/3), moist, occasional gray (organic) staining/marine-trace shell molds, moderate tough, high plasticity, no dilatency.	-1:1 Bentonite Sand Mix  2" Dia. Sch. 80 PVC  2" Dia. Sch. 80 PVC
120	X			17:00	0.3	No Water Sample	CL		SILTY CLAY - Same as Above.	

In greenbelt on the northeast side of Burke Street, just northwest of Beasor Road (near PPO34). Elevation noted is finished surface grade. B = Intermediate; C = Lower Intermediate; D = Deep

OMMONIMTech5/Omega Chemical/MW-23,BOR



(Page 6 of 8)

Omega Chemical Operable Unit 2 Project No. CA000646.0001

**Date Completed** Logged By Checked By

: May 20, 2005 : Ronald Halpern, PG : Ronald Halpern, PG OVA Driller Sampling Method : MiniRae : Mark Green : Core/Simulprobe

**Drilling Company** Drill Rig

: WDC

Diameter : Faline Star SOK-CH ARCH/Mud Calibration Gas/Conc : 100 ppm isobutylene

: 9 3/4 inches

Depth in Feet	Samples	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION	Well2: MW2 Well3: MW2 Elev.: 149.3
130							CL		Set Simulprobe 130-132 on 5/18/05. End drilling 5/18/05.	
-			OC2-PMW23 W-0-21	5/19/05 7:20	0.8		ML		SILT with Clay, stiff, brittle, olive (5Y 4/4), moist, no odor.	经验验
135							SP		(Off cyclone). Poorly graded SAND, predominantly medium grained (80%) with fine (3-5%) and coarse (~15%) sand and trace silt, olive brown, saturated, no odor.  (139' Off cyclone). Poorly graded SAND, same as above.	
140-			OC2-PMW23 W-0-27	- 11:49	1.0		sw		(141-142' Off split spoon). SAND, Well Graded, ~40% fine to medium-grained, ~60% coarse sand (max 5 mm) to fine gravel (12 mm), olive brown (2.5Y 4/3),	
145							SP		Saturated.  (Off split spoon). Poorly graded SAND, fine to medium-grained (max 1 mm diameter), olive brown.	- Industrial Control of the Control

1:1 Bentonite Sand Mix 2" Dia. Sch. 80 PVC 2" Dia. Sch. 80 PVC Medium Chips Sand #30 Sand #2/16 2" Dia. PVC Sch 80 (0.020" Slotted

Screen)

In greenbelt on the northeast side of Burke Street, just northwest of Beasor Road (near PPO34). Elevation noted is finished surface grade. B = Intermediate; C = Lower Intermediate; D = Deep



(Page 7 of 8)

Omega Chemical Operable Unit 2

OC2-PMW23

W-0-29

OC2-PMW23

W-0-32

OC2-PMW23

W-0-34

150

155

160

165-

170

**Date Completed** 

: May 20, 2005

OVA

: MiniRae

Project No. CA000646.0001

Logged By Checked By

: Ronald Halpern, PG : Ronald Halpern, PG Driller Sampling Method : Mark Green : Core/Simulprobe

**Drilling Company** 

: WDC

Diameter

: 9 3/4 inches

Drill Rig

: Faline Star SOK-CH ARCH/Mud Calibration Gas/Conc : 100 ppm isobutylene

Weli1: MW23B

Well2: MW23C Well3: MW23D

**Blow Count SRAPHIC** Recovery % Samples Depth Time OVA JSCS Feet Lab No.

12:52

5/20/05

8:45

13:40

0.7

DESCRIPTION

(151-152' off split spoon). Poorly graded SAND with Silt, fine to medium grained.

Stopped drilling 5/20/05 152'. Resumed drilling 5/23/05 at 7:30 a.m.

SP-SM

GW

ML

ML-CI

GP

ML-CI

(160.5-161' from split spoon). Well graded GRAVEL, fine to coarse gravel (max 30 mm), subrounded, subangular, igneous.

(161-162' off split spoon). SILT, stiff, olive brown (2.5Y 4/3 to 4/4), moist, low toughness, rapid dilatency, low plasticity.

(166-167' off split spoon). CLAYEY SILT, SILTY CLAY, hard, light olive brown (2.5 Y 5/4), moist, no odor, brittle, low to moderate plasticity, low to moderate toughness, slow to moderate dilatency.

Poorly Graded GRAVEL, predominatly fine, (4-10 mm diam), subangular to subrounded, igneous origin (quartz, orthoclase, mafic), saturated (possible sluff).

(171.5-172' off split spoon). CLAYEY SILT, SILTY CLAY, hard (<1/8" indentation), olive (5Y 4/4), moist to wet, no odor; Thin lamina (1-2 cm) gravelly clay, with fine to coarse gravel.

Elev.: 149.35

#2/16 Sand 2" Dia. PVC Sch 80 (0.020"Slotted Screen) 2" Dia. Sch. **PVC** Blank 2" Dia. Sch. 80 PVC 1:1 Bentonite Sand Mix Sand #30

#2/16 Sand

In greenbelt on the northeast side of Burke Street, just northwest of Beasor Road (near PPO34). Elevation noted is finished surface grade. B = Intermediate; C = Lower Intermediate; D = Deep

0.7

0.6

OMMONIMTech5\Omega Chemica\\MW-23.BOR



Depth in Feet		1					Logged Checker Drilling ( Drill Rig	d By Company	: Ronald Halpern, PG : Ronald Halpern, PG : WDC : Faline Star SOK-CH ARCH/Mud	Driller Sampling Diameter Calibration	Method : 0	Mark Green Core/Simulprobe 13/4 inches 00 ppm isobutylene
(180.5-182' off split spoon). Poorly graded SAND with Silt, -5-10% silt, -90-95% fine and medium-grained sand (max 1 mm diam), very dense, light yellowish brown (2.5° fo3), thin lamina (2.3°) of predominantly fine gravel (<19 mm) some coarse (max 30 mm) subrounded, igneous origin from 180.5 to 180.75 ft bgs.  SP-SM  OC2-PMW23 17:20  OC2-PMW23 17:20  OC2-PMW23 17:20  OC2-PMW23 17:20  OC2-PMW23 17:20  OC4-PMW23 17:20  OC4-PMW23 17:20  OC4-PMW23 17:20  OC5-PMW23 17:20  OC5-PMW23 17:20  OC5-PMW23 17:20  OC6-PMW23 17:20  OC6-PMW23 17:20  OC6-PMW23 17:20  OC7-PMW23 17:20  OC7-PMW23 17:20  OC7-PMW23 17:20  OC8-PMW23 17:20  OC8-PMW23 17:20  OC8-PMW23 17:20  OC9-PMW23 1	Depth seld Eeg	Blow Count	Lab No.	Time	OVA	Recovery %	nscs	GRAPHIC	DESCRIPTION		Well2: MW Well3: MW	23C 23D
PVC Blank  GP (191-191.5 off split spoon). Poorly graded GRAVEL with Sand, ~60-70% fine gravel (5 to 10 mm diam), 30-40% fine to coarse sand, ~3-5% silt, olive (5Y 4/4), very dense, saturated, no odor, possible slough.	180		OC2-PMW23 W-0-36	16:40	0.5		SP-SM		graded SAND with Silt, ~5-10% si ~90-95% fine and medium-graine (max 1 mm diam), very dense, lig yellowish brown (2.5Y 6/3), thin la (2-3") of predominantly fine grave mm) some coarse (max 30 mm) subrounded, igneous origin from	It, d sand ht mina I (<19		Sch 80 (0.020" Slotted Screen)
	1 X	11 1		17:20			GP		graded GRAVEL with Sand, ~60- fine gravel (5 to 10 mm diam), 30- fine to coarse sand, ~3-5% silt, ol 4/4), very dense, saturated, no od	70% 40% ive (5Y or,		

In greenbelt on the northeast side of Burke Street, just northwest of Beasor Road (near PPO34) Elevation noted is finished surface grade. B = Intermediate; C = Lower Intermediate; D = Deep

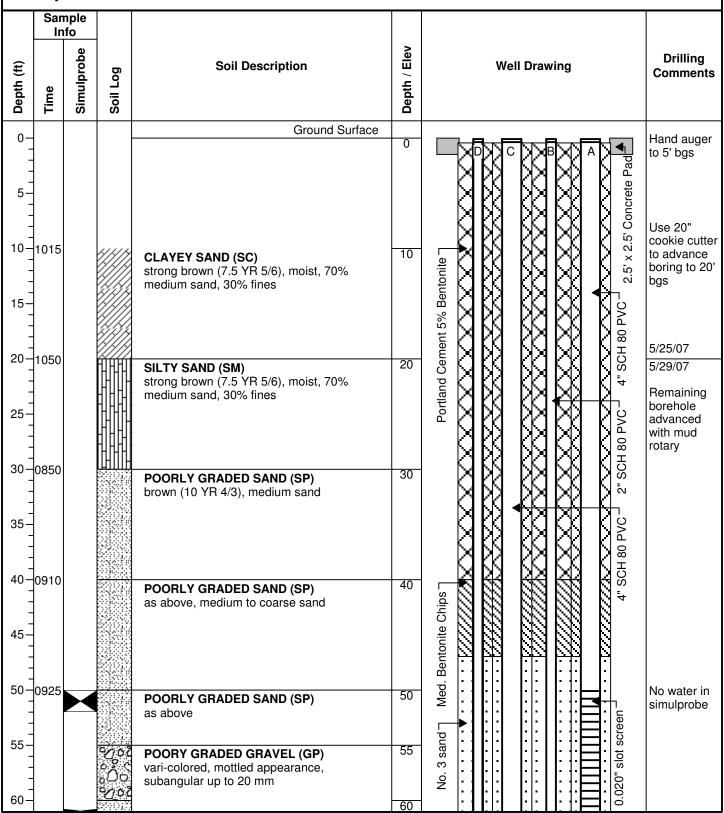


Sheet: 1 of 4

**Driller: WDC** 

Client: U.S. EPA Drilling Method: Direct Mud Rotary
Project: Omega Chemical OU-2 Sampling Method: Grab and Simulprobe

Location: Washington Blvd. & Lambert Dr., Whittier, CAogged by: J. Ockerman



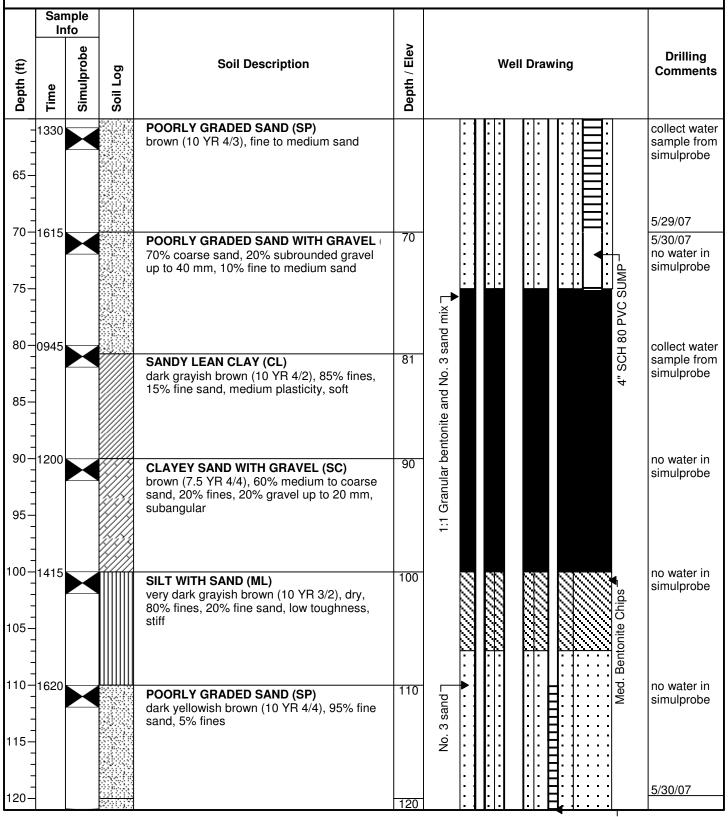


Sheet: 2 of 4

**Driller: WDC** 

Client: U.S. EPA Drilling Method: Direct Mud Rotary
Project: Omega Chemical OU-2 Sampling Method: Grab and Simulprobe

Location: Washington Blvd. & Lambert Dr., Whittier, CAogged by: J. Ockerman



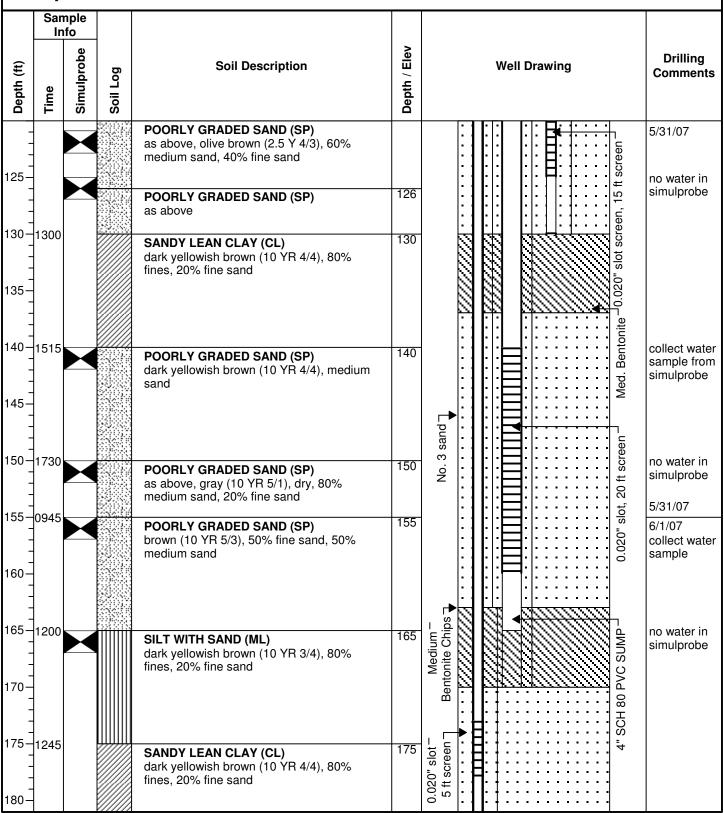


Sheet: 3 of 4

**Driller: WDC** 

Client: U.S. EPA Drilling Method: Direct Mud Rotary
Project: Omega Chemical OU-2 Sampling Method: Grab and Simulprobe

Location: Washington Blvd. & Lambert Dr., Whittier, CAogged by: J. Ockerman



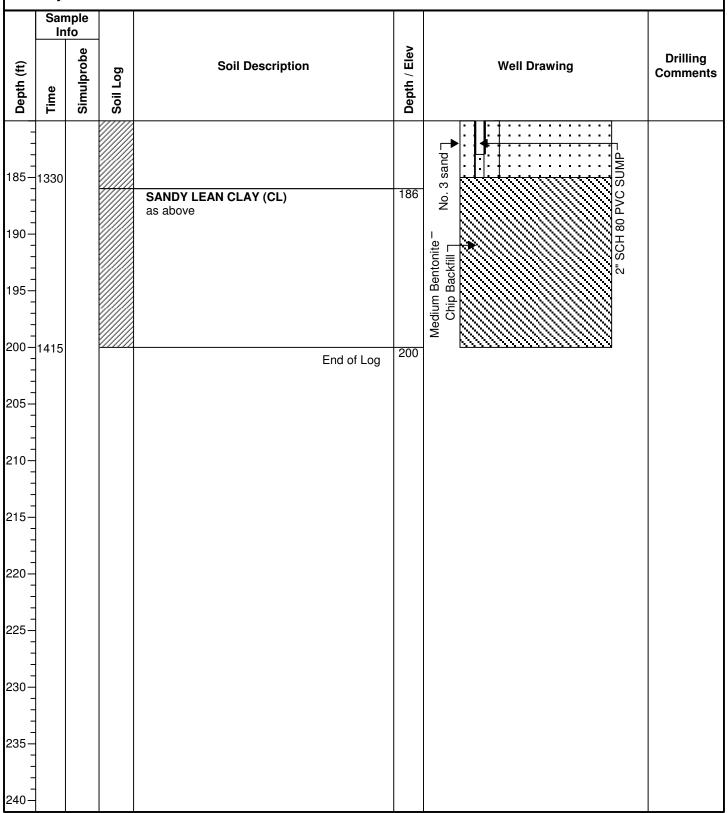


Sheet: 4 of 4

**Driller: WDC** 

Client: U.S. EPA Drilling Method: Direct Mud Rotary
Project: Omega Chemical OU-2 Sampling Method: Grab and Simulprobe

Location: Washington Blvd. & Lambert Dr., Whittier, CAogged by: J. Ockerman





Sheet: 1 of 4

**Driller:** WDC

Client: U.S. EPA Drilling Method: Direct Mud Rotary

Project: Omega Chemical OU-2 Sampling Method: Grab Location: 901 Sorensen Ave. Santa Fe Springs, CA Logged by: D. Jablonski

	Sam						
	Int			Soil Description	:lev		rilling
Depth (ft)	Time	OVA	Soil Log	Son Description	Depth / Elev	Col	mments
	1015			Ground Surface		lan.	<b>.</b>
- - -	1315				0		d auger ft bgs
5-		0.1		SILT WITH SAND (ML) dark yellowish brown (10YR 3/4), moist, 90% fines, 10% fine sand, low plasticity, no toughness or dry strength	5	- XXX XXX XXX XXX XXX XXX XXX XXX XXX X	
- - -	1340	0.6		SILT WITH SAND (ML) as above, slightly more clay	10		
15— - - -						Portland Cement 5% Bentonite	
20-	1352	0.0		SILT WITH SAND (ML) as above, low plasticity, low toughness, rapid dilitancy	20	If and Cemen	
25 — - - -							
- -	1500			POORLY GRADED SAND (SP) light olive brown (2.5Y 5/3), wet, 90% fine to medium sand, 5% fines	30		
35-	4505					Medium — wite Chips —	
- -	1525			POORLY GRADED SAND WITH SILT (SP-SM light olive brown (2.5Y 5/4), 90% fine to medium sand, 10% fines, minor amounts of marly clay/silt with medium plasticity	40	Medium – Medium – Bentonite Chips	
45— - - -				a., say, one man modium plasticity		sand	
50 — - - -				POORLY GRADED SAND (SP) same as above	50	20 ft sc. 3	
55— - - - -						0.020" slot,	
60-			НІНН		60	<u>   :  :  :  :  :  :  :  :  :  :  :  :  :</u>	



Sheet: 2 of 4

**Driller: WDC** 

Client: U.S. EPA Drilling Method: Direct Mud Rotary

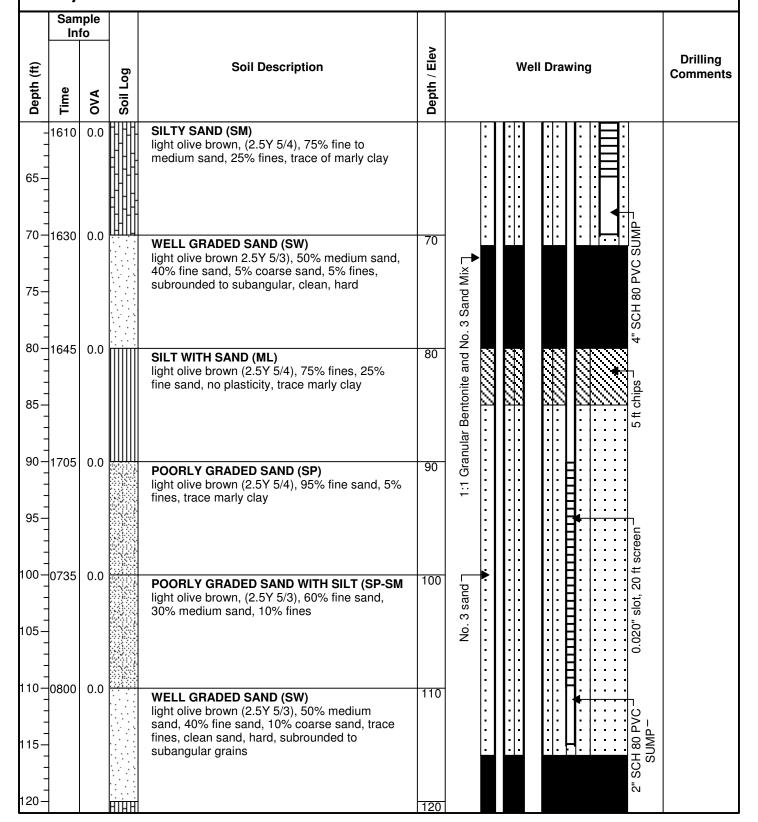
**Project: Omega Chemical OU-2** 

Location: 901 Sorensen Ave. Santa Fe Springs, CA

Project Number: 335392.Fl.01

Sampling Method: Grab Logged by: D. Jablonski

**Start/Finish Date:** 2/28/07 to 3/6/07



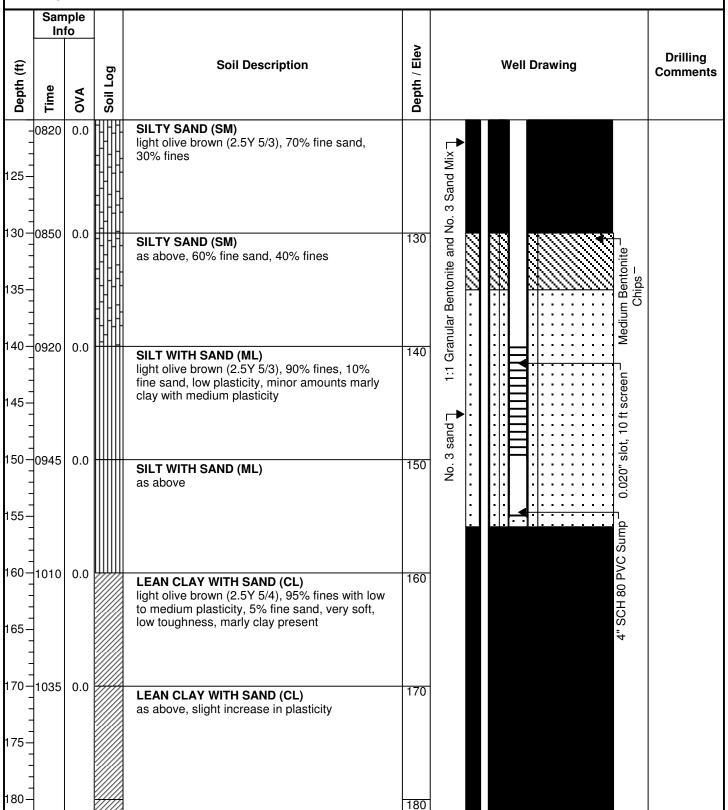


Sheet: 3 of 4

**Driller: WDC** 

Client: U.S. EPA Drilling Method: Direct Mud Rotary

Project: Omega Chemical OU-2 Sampling Method: Grab Location: 901 Sorensen Ave. Santa Fe Springs, CA Logged by: D. Jablonski





Sheet: 4 of 4

**Driller:** WDC

Client: U.S. EPA Drilling Method: Direct Mud Rotary

**Project: Omega Chemical OU-2** 

Location: 901 Sorensen Ave. Santa Fe Springs, CA

Project Number: 335392.Fl.01

Sampling Method: Grab Logged by: D. Jablonski

**Start/Finish Date:** 2/28/07 to 3/6/07

	Sam					
Depth (ft)	Time	OVA	Soil Log	Soil Description	Depth / Elev	Well Drawing Drilling Comments
185— - - - -	1150	0.1		LEAN CLAY WITH SAND (CL) as above, trace of marly clay, clay is stiff with medium plasticity, medium toughness		1:1 Granular Bentonite and No. 3 Sand Mix
190-	1220	0.1		LEAN CLAY WITH SAND (CL) as above, slight increase in yellowish brown clay	190	Bentonite and No
195— - - - 200—				POORLY GRADED SAND (SP) light olive brown (2.5YR 5/4), 95% fine to medium sand, 5 % fines, hard, subrounded, quartz, trace marly clay	195	ranular Bent
205						1:1 Gi
210—	1305	0.2		POORLY GRADED SAND (SP)	210	. <b>H</b>
215—	1330	0.4		light olive brown (2.5Y 5/4), 95% fine to medium sand, 5% fines, subrounded to subangular, quartz, clean		
220 — - - -				SILT WITH SAND (ML) light olive brown (2.Y 5/4), 75% fines, 25% fine sand, no plasticity	220	8 S S S S S S S S S S S S S S S S S S S
- 225 — - - -				Sanu, no piasticity		
230-				End of Log	230	
235— - - - 240—						



**Project: Omega Chemical OU-2** 

Project Number: 335392.FI.01

Location: Bell Ranch Rd. Santa Fe Springs, CA

# Well Number: MW-26

Sheet: 1 of 5

**Driller:** WDC

**Drilling Method:** Direct Mud Rotary

Sampling Method: Grab Logged by: D. Jablonski

	Sam Int						
Depth (ft)	Time	OVA	Soil Log	Soil Description	Depth / Elev		Drilling comments
0- - - 5- -	0805			Ground Surface  SILTY SAND (SM)  dark yellowish brown (10YR 3/4), moist, 60% fine sand, 40% fines	0		and auger 5' bgs
10— - - - 15—	0820		-	SILT WITH SAND (ML) yellowish brown (10YR 4/6), moist, 90% fines, 10% fine sand, low plasticity	10		
20-	0845			SILT WITH SAND (ML) as above  SILTY SAND (SM) yellowish brown (10YR 4/6), 80% fines, 20%	20		19/07 20/07 itiate mud
25— - - -				fine sand, trace fine gravel, subrounded, granitic		Portlan Pod au P	illing at 20'
30-	1120			WELL GRADED SAND WITH SILT (SW-SM) dark yellowish brown (10YR 4/6), 90% fine to coarse sand, 10% fines	30		
-	1204			POORLY GRADED SAND (SP)	40		
45-				olive brown (2.5Y 4/3), 95% fine grained sand, 5% fines			
- -	1220			POORLY GRADED SAND (SP) as above, color change to olive brown (2.5Y 4/4)	50		
55— ——————————————————————————————————					60	rig	g chatter



**Project: Omega Chemical OU-2** 

Project Number: 335392.FI.01

Location: Bell Ranch Rd. Santa Fe Springs, CA

## Well Number: MW-26

Sheet: 2 of 5

**Driller:** WDC

**Drilling Method:** Direct Mud Rotary

Sampling Method: Grab Logged by: D. Jablonski

	Sam Int						
Depth (ft)	Time	OVA	Soil Log	Soil Description	Depth / Elev	Well Drawing Drillin Comme	
65 —				POORLY GRADED SAND (SP) as above, 95% fine to medium grained sand, 5% fines		Medium Bentonite Chips rig chatte	
70 — - - - 75 — - -	1325			POORLY GRADED SAND (SP) as above	70		ər
80— - - 85—	1350			POORLY GRADED SAND (SP) as above	80	·	ər
90-				POORLY GRADED SAND (SP) olive brown (2.5Y 4/4), 95% fine sand, 5% fine gravel, subrounded	90	Chips	
100 — - - 105 — - -				POORLY GRADED SAND WITH CLAY (SP-S( olive brown (2.5Y 4/3), 70% fine sand, 20% fines, 10% silt, trace fine gravel (10mm), subrounded	100	edium Be	
110— - - 115— - - -	1545			POORLY GRADED SAND WITH SILT (SP-SM olive brown (10YR 4/4), 90% fine sand, 10% fines, trace fine gravel, subangular	110	No. 3 sand	



**Project: Omega Chemical OU-2** 

Project Number: 335392.FI.01

Location: Bell Ranch Rd. Santa Fe Springs, CA

## Well Number: MW-26

**Sheet:** 3 of 5

**Driller:** WDC

**Drilling Method:** Direct Mud Rotary

Sampling Method: Grab Logged by: D. Jablonski

	Sam							
Depth (ft)	Time	OVA	Soil Log	Soil Description	Depth / Elev		Well Drawing	Drilling Comments
125— - - 125—				POORLY GRADED SAND (SP) olive brown (2.5YR 4/4), 95% medium sand, 5% fines		×	SCH 80 PVC Sump	
130— - - 135—				SILTY SAND (SM) olive brown (2.5YR 4/3), 80% fine sand, 20% fines	130	1:1 Bentonite and Sand mix	2	
140— - - 140—	1650			LEAN CLAY WITH SAND (CL) dark greenish gray (4/5GY),90% fines, 10% fine sand, low plasticity, very soft, no dilitancy, salt and pepper appearance	137	1:1 Bentonite	Medium Bentonite Chips	no rig chatter
145— - - - -						put	Medium Ber	2/20/07
- - -	0743			SILTY SAND (SM) olive (5Y 5/3), 60% fine sand, 40% fines, some greenish gray marly clay with low plasticity, and pepper appearance, very soft	150	No. 3 sand	t screen	2/21/07
155-				and pepper appearance, very son			0" slot, 15 fl	no rig chatter
160— - - - 165—	0815			SILTY SAND (SM) olive (5Y 5/3), 70% fine sand, 30% fines, trace marly clay with low plasticity	160		/C 0.020"	
- - -	0850				170	- xim bu	Z" SCH 80 PVC-2	
175 – 175 –				SILTY SAND (SM) as above, 80% fine sand, 20% fines	170	1:1 Bent. and Sand mix	ı	
180					180	1:1 Be	Medium Sentonite Chips	



Sheet: 4 of 5

**Driller:** WDC

Client: U.S. EPA Drilling Method: Direct Mud Rotary

Project: Omega Chemical OU-2

Location: Bell Ranch Rd. Santa Fe Springs, CA

Sampling Method: Grab

Logged by: D. Jablonski

	Sam Inf							
Depth (ft)	Time	OVA	Soil Log	Soil Description	Depth / Elev		Well Drawing	Drilling Comments
185— - 1- 185— - -	0930			POORLY GRADED SAND WITH SILT (SP-SM dark greenish gray (GLEY1 4/10Y), 90% fine sand, 10% fines, trace dark greenish gray marly clay			3 sand	
190— - - 195— - -	0955			POORLY GRADED SAND WITH SILT (SP-SM as above, 90% fine to medium sand, 10% fines	190	slot, 20 ft screer	OZ	rig chattering
200— - - - 205— - -	1020			POORLY GRADED SAND WITH SILT (SP-SM as above, fine sand	200	0.0		strong rig
210 — - - - 215 — -				SILTY SAND (SM) dark greenish gray (GLEY1 4/5GY), 70% fine sand, 30% fines, dark greenish gray marly clay	210	2" SCH 80 PVC Sump		chatter at 208 ft bgs
220 — - - - - 225 — -	1125			LEAN CLAY WITH SAND (CL) dark greenish gray (GLEY1 4/5GY), 60% fines, 40% fine sand, low plasticity, poorly graded sand, minor dark greenish gray marly clay, very soft, sticky	220			
230 — - - - 235 — -	0800			LEAN CLAY WITH SAND (CL) dark greenish gray (GLEY1 4/5GY), 80% fines, 20% fine sand, low to medium plasticity, minor dark bluish gray marly clay, soft, sticky, trace fine gravel, 10-15 mm diameter, subrounded	230	Medium Bentonite Chip Backfill	_ [	2/21/07 2/22/07
- 240 <i>-</i>	0900				240	Medi		



**Project: Omega Chemical OU-2** 

Project Number: 335392.FI.01

Location: Bell Ranch Rd. Santa Fe Springs, CA

## Well Number: MW-26

**Sheet:** 5 of 5

Driller: WDC

**Drilling Method:** Direct Mud Rotary

Sampling Method: Grab Logged by: D. Jablonski

	Sam	iple fo						
Depth (ft)	Time	OVA	Soil Log	Soil Description		Depth / Elev	Well Drawing	Drilling Comments
- - 245 — - -				LEAN CLAY WITH SAND (CL) as above				
250 — - -	1015				End of Log	250		
- 255 — - -								
260 — - -								
265— - - - -								
270— - - - -								
275— - - - -								
280 <del>-</del> - - - -								
285— - - - -								
290 — - - - -								
- 295 – - - -								
300-								



Sheet: 1 of 4

Client: U.S. EPA

**Project: Omega Chemical OU2** 

Location: Clark St. & Norwalk Blvd., Santa Fe Springs

Project Number: 335392.FI.01

**Driller:** WDC

**Drilling Method:** Mud rotary **Sampling Method:** Grab **Logged by:** D. Jablonski

	Sam Inf						
Depth (ft)	Time	OVA	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
0-	1209		•	Ground Surface	0		hand auger to
15-	1243			POORLY GRADED SAND WITH SILT (SP-SM) very dark greenish gray (5GY 3/1), moist, 90% fine sand, 10% fines, no odor or staining	10	onite •	5 bgs  drill with cookie cutter, no mud
20 – - - - 25 – -	1445	0.0		<b>LEAN CLAY (CL)</b> olive gray (5Y 5/2), moist, low plasticity, soft, low toughness	20	Portland Cement 5% Bentonite	drill with cookie cutter, add water, begin drilling with mud rotary
35-	0940	0.0		POORLY GRADED SAND WITH CLAY (SP-SC) light olive brown (2.5Y 5/4), 90% fine to medium sand, 10% fines (marly clay), clay yellowish brown (10YR 5/6), minor cemented sand, subangular	30	Portland	4/9/07 4/10/07
40 — - - - 45 — -	1000	0.0		CLAYEY SAND (SC) light olive brown (2.5Y 5/4), 60% fine to medium sand, 40% fines (marly clay), clay is strong brown (2.5YR 4/6)	40		
55 —	1030	0.0		CLAYEY SAND (SC) light olive brown (2.5Y 5/4), 50% fine to medium sand, 40% clay, 10% fine gravel, subangular to subrounded, primarily quartz, clay is strong brown (2.5YR 4/6) with low plasticity	50		
60-					60	<u>KAKKAKNIKI KI KI</u>	



Sheet: 2 of 4

Client: U.S. EPA

**Project: Omega Chemical OU2** 

Location: Clark St. & Norwalk Blvd., Santa Fe Springs

Project Number: 335392.FI.01

**Driller:** WDC

**Drilling Method:** Mud rotary **Sampling Method:** Grab **Logged by:** D. Jablonski

Soil Description  BO III  TO I	s with trace  70 sand, 5% ite, quartz,	Drilling Comments
greenish gray (GLEY1 5/10Y), salt a appearance, 95% fine sand, 5% fine brown marly clay  POORLY GRADED SAND (SP) gray (2.5Y 5/1), 95% fine to mediun fines, trace fine granitic gravel (grar feldspar)  POORLY GRADED SAND (SP) as above  POORLY GRADED SAND (SP)  POORLY GRADED SAND (SP)	s with trace  70 sand, 5% ite, quartz,	
POORLY GRADED SAND (SP) gray (2.5Y 5/1), 95% fine to mediun fines, trace fine granitic gravel (grar feldspar)  POORLY GRADED SAND (SP) as above  POORLY GRADED SAND (SP)  POORLY GRADED SAND (SP)	sand, 5% ite, quartz,	
90 1300 0.0 POORLY GRADED SAND (SP)  POORLY GRADED SAND (SP)		
POORLY GRADED SAND (SP)	Medium Bentonite Chips	
95— 95—	No. 2/12 sand	drilling slow and difficult
POORLY GRADED SAND (SP) as above, medium sand	100	0.020" slot,
WELL GRADED SAND (SW) gray (2.5Y 5/1) to light olive brown (black (GLEY1 2.5/N), 60% coarse s medium sand, 10% fine sand, suba subrounded granitic clast (primarily	2.5Y 5/3) to and, 30%	SCH 80 PVC Sump



Sheet: 3 of 4

Client: U.S. EPA

**Project: Omega Chemical OU2** 

Location: Clark St. & Norwalk Blvd., Santa Fe Springs

Project Number: 335392.FI.01

**Driller:** WDC

**Drilling Method:** Mud rotary **Sampling Method:** Grab **Logged by:** D. Jablonski

	Sam Inf						
Depth (ft)	Time	OVA	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
125— - - 125—	1404	0.0		WELL GRADED SAND (SW) pale yellow (2.5Y 8/1) to black (GLEY1 2.5/N), 40% medium sand, 30% coarse sand, 30% fine sand, subangular to subrounded clast (feldspar, quartz, mafic minerals)		nd Sand Mix Ţ	
130 — - - 135 — - -	1440	0.0		WELL GRADED SAND (SW) dark greenish gray (GLEY1 4/5GY), 40% fine sand, 40% medium sand, 15% coarse sand, 5% fine granitic gravel, clean, primarily quartz, feldspar and mafic minerals, angular to subrounded	130	- Bentonite	
140 — - - - 145 — - -	1500	0.0		WELL GRADED SAND WITH CLAY (SW-SC) dark greenish gray (GLEY1 4/5GY), 90% fine to coarse sand, 10% fines (marly clay) soft, granitic clast (quartz, feldspar, mafic minerals)	140	2/12 sand 1:1	
150 — - - - - 155 — -	1530	0.0		POORLY GRADED SAND (SP) dark greenish gray (GLEY1 4/5GY), 95% fine to medium sand, 5% fines, trace marly green clay	150		
160— - - - 165—	1550	0.0		POORLY GRADED SAND (SP) as above	160	:  :  :  :   <b>:   :</b>  : ::::  ::::	
170— - - - - 175—	0740	0.0		POORLY GRADED SAND (SP) as above, 95% fine to medium sand, 5% fines, trace of bluish green clay with low plasticity	170	\$	4/10/07 4/11/07
- - 180—					180		



Sheet: 4 of 4

Client: U.S. EPA

**Project: Omega Chemical OU2** 

Location: Clark St. & Norwalk Blvd., Santa Fe Springs

Project Number: 335392.FI.01

**Driller:** WDC

**Drilling Method:** Mud rotary Sampling Method: Grab Logged by: D. Jablonski

	Sam Inf						
Depth (ft)	Time	OVA	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
185— - 185— - - -	0815	0.0		SILT (ML) greenish gray (GLEY2 5/10BG), 90% fines, 10% fine to medium sand, trace coarse sand, no plasticity or toughness, very soft		No. 2/12 sand	
- - - 195 — - - -		0.0		SANDY SILT (ML) as above, 70% fines, 30% fine to medium sand, trace bluish green clay and coarse sand	190	SCH 80 PVC Sump Sump Chips 0.020"	
200 — - - - 205 — -	0855	0.0		<b>LEAN CLAY WITH SAND (CL)</b> greenish gray (GLEY2 5/10BG), 95% fines, 5% fine sand, low plasticity, low toughness, very soft	200	in Bent	drilling hard at 203 ft bgs
210- - - - - 215-	0930	0.0		POORLY GRADED SAND WITH SILT (SP-SM) greenish gray (GLEY2 5/5BG), 80% medium sand, 10% coarse sand, 10% fines, trace of bluish green clay with low plasticity, granitic clast	208	000	rig chatter
215— - - - 220—	0945			SILT WITH SAND (ML)	220	SCH 80 PV Sump <sup>-</sup> Sump <sup>-</sup> Sump <sup>-</sup> Sump <sup>-</sup>	drilling softer at 215 ft bgs
- - 225 – -	0955			greenish gray (GLEY2 5/5 BG), 80% fines, 20% medium to coarse sand, no plasticity or toughness, very soft  End of Log	225	5	
230 — - - -							
235 — - - - 240 —							



Sheet: 1 of 3

Driller: Boart Longyear
Drilling Method: Rotosonic

Client: U.S. EPA Drilling Method: Rotosonic
Project: Omega Chemical OU-2 Sampling Method: Continuous Core

**Location:** Pioneer and Lakeland Blvd, Santa Fe Springs **Logged by:** J. Ockerman **Project Number:** 335392.FI.01 **Start/Finish Date:** 5/14/07

	Sam						
Depth (ft)	Time	OVA	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
0-				Ground Surface	0		Hand auger
-	1130 1145	0.0		SILTY SAND (SM) dark grayish brown (10 YR 4/2), dry, 70% fine sand, 30% fines	2	12" Flush-mounted Emco box-	to 5' bgs
10-			ШНЦ	POORLY GRADED SAND (SP) pale brown (10 YR 6/3), dry, 95% fine sand, 5% fines	8	12" Flush-mou	
15— -							
-   -   -	1200	0.0		POORLY GRADED SAND (SP) as above	18	Portland Cement 5% Bentonite	
25- - -				POORLY GRADED SAND (SP) as above	26		
30-	1220	0.0		POORLY GRADED SAND (SP) as above, except with occasional gravel up to 40 mm, rounded	28	l Portland	
35-				SANDY LEAN CLAY (CL) brown (10 YR 4/3), moist, low plasticity  POORLY GRADED SAND (SP) pale brown (10 YR 6/3), moist, occasional	32		
40-	1330	0.0		gravel up to 30 mm subrounded  POORLY GRADED SAND (SP) as above	38		
45— -				SANDY LEAN CLAY (CL) brown (10 YR 4/3), moist, medium stiffness	44		
50-					48		



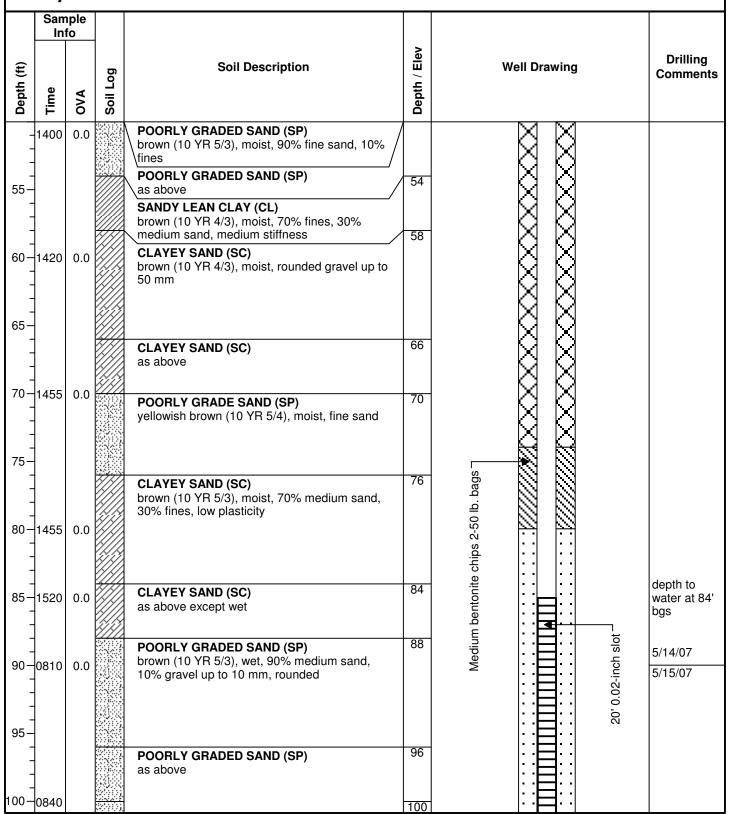
Sheet: 2 of 3

Driller: Boart Longyear

Drilling Method: Rotosonic

Client: U.S. EPA Drilling Method: Rotosonic
Project: Omega Chemical OU-2 Sampling Method: Continuous Core

**Location:** Pioneer and Lakeland Blvd, Santa Fe Springs **Logged by:** J. Ockerman **Project Number:** 335392.Fl.01 **Start/Finish Date:** 5/14/07





Sheet: 3 of 3

Driller: Boart Longyear
Drilling Method: Rotosonic

Client: U.S. EPA Drilling Method: Rotosonic
Project: Omega Chemical OU-2 Sampling Method: Continuous Core

**Location:** Pioneer and Lakeland Blvd, Santa Fe Springs **Logged by:** J. Ockerman **Project Number:** 335392.FI.01 **Start/Finish Date:** 5/14/07

	Sam	iple fo						
Depth (ft)	Time	OVA	Soil Log	Soil Description		Depth / Elev	Well Drawing	Drilling Comments
- - - 105 – -	0910	0.0		POORLY GRADED SAND (SP) as above, except no gravel			sand C.	
- 110- - - -	1000	0.0		POORLY GRADED SAND (SP) as above	End of Log	108 110	9   1   1   8 🛱	
115— - - - 120—								
- - - 125 - -								
- 130 — - - -								
- 135 — - - - -								
140 — - - - 145 —								
- - - 150								



Sheet: 1 of 3

**Driller:** Boart Longyear **Drilling Method:** Rotosonic

Client: U.S. EPA Drilling Method: Rotosonic
Project: Omega Chemical OU-2 Sampling Method: Continuous Core

Location: Gettysburg Dr. and Norwalk Blvd, Norwalk, CALogged by: J. Ockerman

	Sam						
Depth (ft)	Time	PID (ppm)	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
0- - - 5-	0944	1.6		Ground Surface  SILT (ML) light olive brown (2.5 Y 5/4), dry, roots present  POORLY GRADED SAND (SP) light yellowish brown (2.5 Y 6/3), moist, 60% fine sand, 40% medium sand	3	12" Flush-mounted Emco box	Hand auger to 5' bgs
10-		0.3				l XI <del>IXI</del>	
15— - - -		0.2		SILT (ML) dark yellowish brown (10 YR 4/6), moist, low plasticity, low toughness, 5% fine sand, weak cementation	15	Te SCH 80 PVC	
20-	1033			SILT (ML) as above  SILTY SAND (SM) dark yellowish brown (10 YR 4/6), moist	20	Portland Cement 5% Bentonite	
25— - - -		0.3		POORLY GRADED SAND (SP)  dark yellowish brown (10 YR 4/4), moist, 90% fine sand, 5% medium sand, 5% fines		and Cement	
30-		0.2		SILTY SAND (SM) light olive brown (2.5 Y 5/4), moist, 50%	32		
35— - -				medium to coarse sand, 50% fines, fine to coarse gravel (55 mm maximum) present  POORLY GRADED SAND WITH GRAVEL (SP light olive brown (2.5 Y 5/6), moist, 70% fine	37		
40-	1115	0.1		sand, 20% fine to coarse (5 mm to 30 mm), 10% medium sand			
- - 50-	1130			SILTY SAND (SM) light olive brown (2.5Y 5/4), moist, soft	47		



Sheet: 2 of 3

Driller: Boart Longyear
Drilling Method: Rotosonic

Client: U.S. EPA Drilling Method: Rotosonic
Project: Omega Chemical OU-2 Sampling Method: Continuous Core

Location: Gettysburg Dr. and Norwalk Blvd, Norwalk, CALogged by: J. Ockerman

	Sam						
Depth (ft)	Time	PID (ppm)	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
55— 55— 60— 65— 70—		0.2		SILTY SAND (SM) light olive brown (2.5 Y 5/4), moist  SILTY SAND (SM) olive brown (2.5 Y 4/3), moist, very fine sand  SILT (ML) light olive brown (2.5 Y 5/4), moist, low plasticity same as above, color change to greenish gray (GLEY 1 5/10Y), Fe oxide mottling  LEAN CLAY (CL) greenish gray (GLEY 1 5/10Y), medium plasticity  SILTY SAND (SM) greenish gray (GLEY 1 5/10Y), moist  POORLY GRADED SAND (SP) light olive brown (2.5Y 5/6), moist, fine sand, 5% fines, 76 to 77 ft: 40% medium sand	57 60 62 64 66 68		
80—  80— 				SILTY SAND (SM) olive brown (2.5Y 4/3), moist, fine sand, 79 to 81 ft: medium sand, sand wet at 80 ft	78	chips	
85— - - 90— -	1300	0.0		SILT (ML) olive brown (2.5Y 4/3), moist, cemented, Feoxide, mottling SILTY SAND (SM) light olive brown (2.5 Y 5/6), wet, 80% medium sand, 20% fine sand, clean	85	ledium bentonite	
95 — - - - 100 —	1330			POORLY GRADED SAND (SP) as above, color change to light olive brown (2.5 Y 5/3), wet	95	M	

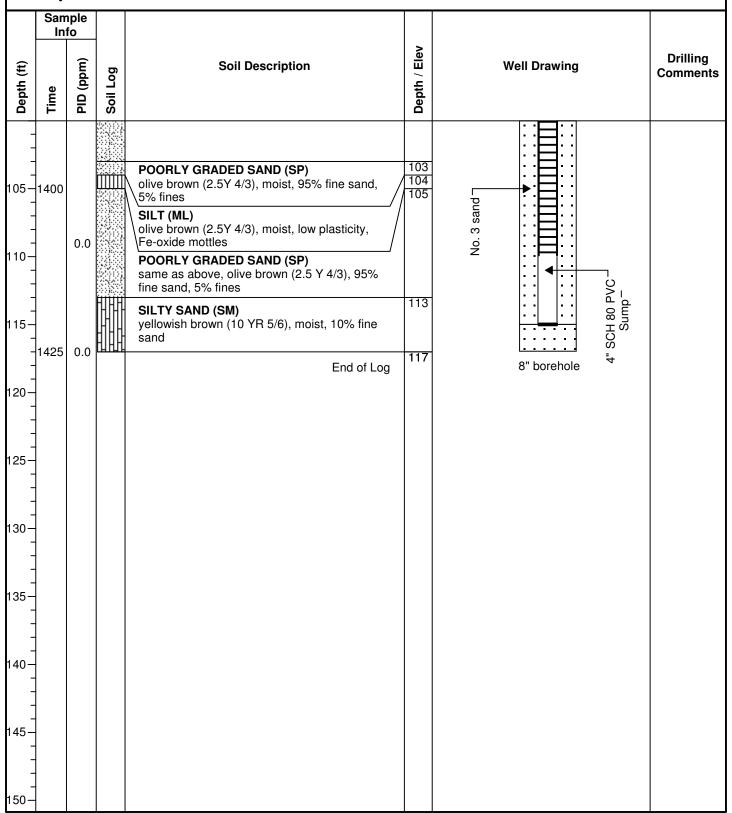


Sheet: 3 of 3

**Driller:** Boart Longyear **Drilling Method:** Rotosonic

Client: U.S. EPA Drilling Method: Rotosonic
Project: Omega Chemical OU-2 Sampling Method: Continuous Core

**Location:** Gettysburg Dr. and Norwalk Blvd, Norwalk, C**ALogged by:** J. Ockerman





Sheet: 1 of 3

Client: U.S. EPA

**Project: Omega Chemical OU-2** 

Location: Civic Center Drive, Norwalk, CA

Project Number: 335392.FI.01

**Driller:** Boart Longyear **Drilling Method:** Rotosonic

Sampling Method: Continuous Core

Logged by: J. Ockerman

**Start/Finish Date:** 6/11/07 to 6/12/07

	Sam						
Depth (ft)	Time	PID (ppm)	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
0-			-	Ground Surface	0		Hand auger
5-		0.0		SILTY SAND (SM) dark reddish brown (5 YR 3/3), moist, 80% fine sand, 20% fines	2	12" Flush-mounted Emco box	to 5' bgs
- - -	0900	0.0		POORLY GRADED SAND (SP) brown (7.5 YR 4/4), moist, fine sand	8	12" Flush-m	
15-							
20-	0930	0.0		POORLY GRADED SAND WITH GRAVEL (SP as above, dark yellowish brown (10 YR 4/4), moist, 80% medium to coarse sand, 20% gravel (up to 10 mm)	18	Portland Cement 5% Bentonite	
25 — - -	0945			CLAYEY SAND (SC) olive brown (2.5 Y 4/4), 80% fine sand, 20% fines, low plasticity	24		
30-	0950	0.0		POORLY GRADED SAND (SP) strong brown (7.5 YR 4/6), moist, medium sand	28	Portland	
35-							
40-	1015	0.0		POORLY GRADED SAND (SP) olive gray (5Y 4/2), moist, fine to medium sand, salt and pepper appearance	38		
45-	1045	0.0		<b>LEAN CLAY (CL)</b> olive gray (5 Y 4/2), moist, low to medium plasticity, stiff	44		
50-							



Sheet: 2 of 3

Client: U.S. EPA

**Project: Omega Chemical OU-2** 

Location: Civic Center Drive, Norwalk, CA

Project Number: 335392.FI.01

**Driller:** Boart Longyear **Drilling Method:** Rotosonic

Sampling Method: Continuous Core

Logged by: J. Ockerman

Start/Finish Date: 6/11/07 to 6/12/07

	Sam In	iple fo					
Depth (ft)	Time	PID (ppm)	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
-						N N	
55—	1105	0.0		POORLY GRADED SAND (SP) olive gray (5 Y 4/2), moist, fine sand	52		
60-	1125	0.0		POORLY GRADED SAND (SP) as above, salt and pepper appearance	58		
65— - -	1150	0.0		POORLY GRADED SAND WITH CLAY (SP-St greenish gray (GLEY 1 5/1 10GY), moist, 90% fine sand, 10% fines	64		
70-	1200	0.0		POORLY GRADED SAND (SP) olive brown (2.5Y 4/3), moist, fine sand	68		
75— - -					70		
80-	1345	0.0		POORLY GRADED SAND (SP) olive brown (2.5 Y 4/4), moist, 95% fine sand, 5% fines	78		
85- - -					88	Ships	
90-	1455	0.0		POORLY GRADED SAND (SP) light olive brown (2.5 Y 5/4), moist, medium sand		Medium bentonite chips	DTW at 92.5' bgs
95 — - -					98		
100 —							



Sheet: 3 of 3

Client: U.S. EPA

**Project: Omega Chemical OU-2** 

Location: Civic Center Drive, Norwalk, CA

Project Number: 335392.FI.01

**Driller:** Boart Longyear **Drilling Method:** Rotosonic

Sampling Method: Continuous Core

Logged by: J. Ockerman

**Start/Finish Date:** 6/11/07 to 6/12/07

	Sam				1	<u> </u>	
	In						
Depth (ft)	Time	PID (ppm)	Soil Log	Soil Description	Depth / Elev	Well Drawing	Drilling Comments
- - - 105 — -				POORLY GRADED SAND (SP) very dark greenish gray (GLEY2 3/1 5BG), moist, fine sand		sand	
- 110- - -	1620	0.0		POORLY GRADED SAND (SP) as above	108	No. 3 sand	
- 115— - -	1700	0.0		POORLY GRADED SAND (SP) as above, except medium sand	114		
- 120 <i>-</i> - - -	0830	2.0		POORLY GRADED SAND (SP) very dark greenish gray (GLEY2 3/1 5BG), wet, fine sand	118		120 to 130 ft: strong hydrocarbon odor
- 125 - - -						onite chips:	
130 <i>-</i> 130 - - -	0900	3.8		POORLY GRADED SAND WITH SILT (SP-SM dark greenish gray (GLEY2 4/1 10BG), wet, 90% fine sand, 10% fines  End of Log	130	🙎 [[[[[]]]]	
- 135 <i>-</i> - -						Backfill with	
- 140 — - -							
- 145 — - - -							
150-							

#### MONITORING WELL: OW-1

DATE DRILLED: 6/4/96

BOREHOLE DIA.: 6.5-inch. reamed to 10" TOTAL DEPTH OF BORING: 80 feet bis

DRILLING COMPANY: Gregg Drilling

DRILLER'S NAME: C. Winegarner

LOGGED BY: G. Cranham (R.G.# 5897)

SURFACE ELEVATION: 207.9 feet msl

METHOD: Hollow Stem Auger

DRILL RIG: Mobile Drill B-61

CHECKED BY: M. Palmer (R.G.# 5915)

PROJECT NAME: Omega

PROJECT NUMBER: 445.2

LOCATION: See Figure 1.

COMMENTS: Sampler: 2.5 foot continous core sampler & 1%-inch SPT sampler.

Weather: Hazy sunshine, wind 0-5 mph from east, 70° F.

#### WELL DETAILS

DATE WELL INSTALLED: 6/4/96

SCREEN: 4-inch ID, 0.020-inch, stainless steel

wire-wrap well screen.

CASING: 4-inch ID, flush threaded, schedule 40 PVC blank

well casing.

DNAPL SUMP: 4-inch ID, flush threaded.

stainless steel well casing

FILTER PACK MATERIAL: No. 2/12 Monterey Sand

SEAL: Concrete 0 to 3.5 feet bls

Neat Portland Cement 3.5 to 56.2 feet bis Medium Bentonite toblets 56.2 to 59 feet bls COVER: Above-ground tocking steel vault

WATER LEVEL: 67.6 feet bls. (6/5/96)

SCREEN INTERVAL: 62.5 to 77.5 feet bis

CASING INTERVAL: 0 to 62.5 feet bis

DNAPL SUMP CASING INTERVAL:77.5 to 80 feet bis

FILTER PACK INTERVAL: 59 to 77.5 feet bis

COMMENTS Filter pack separated from cement seal surrounding DNAPL sump by canvas

cementing basket.

DEPTH (feet) SAMPLE		RECOVERY %	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL DIAGR.	
1- 2- 3-			CH CH		Concrete Slab Clayey Silt to Silty Clay, Very dark brown, moist to very moist, loose.		
4 — 5 — 6 —	·	72	ML		Silt with Sand, yellowish brown (10 YR 5/4), moist to very moist, soft to firm (crumbly), low plasticity, medium dry strength, low toughness, sand very fine, some carbonate pore fillings.  [5-6.8*: UV-no]	ַ התחתות החתות הרוך התחתות החתות הרוך	
7- 8- 9-		100			[7.5-10': UV-no]		
0-		84			[10-12.1': UV-no]		

FIGURE B-3. LITHOLOGIC LOG FOR MONITORING WELL OW-1

SHEET 1 OF 5

PROJECT NAME: Omega

PROJECT NUMBER: 445.2

DATE DRILLED: 6/4/96

MONITORING WE	-11:	OW-1
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UEP In (reet)	SAMPLE	RECOVERY %	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL DIAGR
3-		100	ML		[12.5–15': UV-no]	
4-					Root casts or soil pores common at 14 to 15 feet.	
5- 6-		84			Very maist at approximately 15 feet.  [15-17.1': UV-no; Dye-no reaction]  Granitic pebble at 15.7 feet	
7– 8–		100			[17.5-20': UV-no]	
9- 0- 1-		92			[20-22.3': UV-no; Dye-no reaction]	
2-	V	36			[22.5-23.4: UV-no]	
1- 5- 6-		0				
7— 3—		8			*	
9-					(Clay ball in auger bit may have interfered with recovery.)	
0-		88			Increased clay content at 30.1 to 30.4 feet.	plasticity, occasional
51-			СН		Clay, brown (10 YR 4/3), moist, very stiff, medium to high p	plasticity,
2-	Z	72			medium toughness, high dry strength; trace silt, trace sand, pebbles [31.5-32.5: UV-no; Dye-no reaction]	occasional

FIGURE B-3. LITHOLOGIC LOG FOR MONITORING WELL OW-1

PROJECT NAME: Omega

PROJECT NUMBER: 445.2

DATE DRILLED: 6/4/96

MONITORING '	WFIL:	OW-1
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DEPTH (feet)	SAMPLE	RECOVERY	nscs	GRAPHIC	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL DIAGRAM
i4 —			CH		Slickensided Structure at 33 feet.	
55-		40			Increased silt content at 35.1 to 35.5 feet, stiff [35-36': UV-no; Dye-no reaction]	
6- 7-					+	
8-		52	ML		Silt with Sand, same as 5 to 14 feet.  [37.5-38.8': UV-no]	
9-					[AO 41] UV and Due and acceptant	
) — 1—		40			[40-41': UV-no: Dye-no reaction]	
2-		92			[42.5-44.8': UV-no]	
	-		СН		43.6 to 44 feet: grades downward to clay.  Clay, same as 31.2 to 37 feet.	
-	Ö	76			Increased silt content at 45 to 46 feet and 47.5 to 48 feet. [45-46.9': UV-carbonates; Dye-no reaction]	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
7 —	Z	84			[47.5-49.6': UV-carbonate]	
3-					Carbonate streaks common at 49 to 52 feet.	
)_		100			Slickensided structure at 50 to 51.5 feet	
1-					[50-52.5': UV-carbonate; Dye-no reaction]	
2-						
3—						

RPT NO.

SHEET 3 OF 5

PROJECT NAME: Omega PROJECT NUMBER: 445.2 DATE DRILLED: 6/4/96

CH  CH  Clay: dark brown.  [65-67-4]  66-66-66-66-66-66-66-66-66-66-66-66-66	DEPTH (feet) SAMPLE	RECOVERY %	nscs	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL		WELL DIAGRA
74	56- 57- 58- 59- 59- 61- 62- 63- 64- 65- 66- 67- 68- 70- 71- 72- 73-	100	- Mt_		[65-67.4': UV-no; Dye-no reaction; OVA-12 ppm]  Silt, yellowish brown with reddish-brown fine sand patches, (sold to 5/4; fine sand: 7.5 YR 5/8), moist  Silty Sand, very moist to wet, medium to coarse, 0.05 foot base of silt, slight chemical odor.  Clay, same as 31.2 to 37 feet, stiff.  [67.5-70': UV-no]  Wet at 67.7 feet.	silt: 10 YR thick, at	
RPT NO.  SHEET 4 OF 5				VIII.			

FIGURE B-3. LITHOLOGIC LOG FOR MONITORING WELL OW-1

PROJECT NAME: Omega

PROJECT NUMBER: 445.2

DATE DRILLED: 5/4/96

MONITORING	WFII .	0W-1
MUNICIPAL	111	

DEPTH (feet) SAMPLE	RECOVERY 3	sosn	GRAPHIC LOG	LITHOLOGIC DESCRIPTION OF MATERIAL	WELL DIAGRAM
76- 77- 78- 79-	100	СН		Carbonate steaks common at 75 to 79.5 feet, Carbonate layer at 75.5 to 75.6 feet. Increased silt content below 75 feet, firm to stiff. [75-76.5': UV-carbonate]  [78.5-80': UV-no]  Granitic pebble at 78.7 feet	
81– 82– 83– 84– 85– 86– 87–				TOTAL DEPTH OF BORING = 80 FEET BELOW LAND SURFACE	.(
88- 89- 90- 91- 92- 93- 94- 95-					

RPT NO.

SHEET 5 OF 5



Telephone: (949) 752-5452 Fax: (949) 752-1307

# BORING/WELL CONSTRUCTION LOG

PROJECT NAME   One-ga Chemical   Onto Price   Onto Pric	
DRILLING METHOD  Modified CA Spit Spoon  GRAVEL PACK TYPE  GROUND ELEVATION  TOP OF CASING  LOGGED BY  Mice Hoffman  REMARKS  ROUND REMARKS  REMARKS  REMARKS  REMARKS  REMARKS  REMARKS  REMARK	
SAMPLING METHOD GROUND ELEVATION GROUND TYPE/DUANTITY FORTHAM Cement/5% Benionite/495.  GROUND WATER ELEVATION  Methodisan GROUND WATER ELEVATION  METHOD GROUND WATER ELEVATION  METHOD GROUND WATER ELEVATION  METHOD GROUND WATER ELEVATION  WELL DIAGRAM  UP 18	
GROUND ELEVATION TOP OF CASING LOGGED BY Mike Hoffman REMARKS  REM	
DEPTH TO WATER   59.00   DEPTH TO WATER   59	_
REMARKS  REM	jal_
REMARKS	-
CONCRETE is 4 inches thick.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  18 OC-SG OVIDS - CL  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  18 OC-SG OVIDS - CL  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, trace pebbles to 1/2° diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2° diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2° diameter; uV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2° diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2° diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV	
CONCRETE is 4 inches thick.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  18 OC-SG OVIDS - CL  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  18 OC-SG OVIDS - CL  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, trace pebbles to 1/2° diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2° diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2° diameter; uV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2° diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2° diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV	и
SiLTY CLAY: brown (10YR4/3); low plasticity, soft, no UV    18	
0.0	
9.4 9 18	
9.4   18   0C-SG	
9.4   18   0C-SG	
3.0	
9.4 9 18 OC-SG 1 10 SILTY CLAY: brown (10YR4/3); low plasticity, soft, UV illuminated small fragments, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	
9.4 9 18 OC-SG 10 OC-	
9.4 9 18 OC-SG OW1b S - CL SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	
9.4 9 18 OC-SG OW1b S - CL SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	1
9.4 9 18 OC-SG 20 OW1b Sc - CL SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2" diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2" diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2" diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	1
9.4 9 18	
9.4 9 18 OC-SG OW1b SS - CL SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; UV illuminated small fragments and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; no UV illumination, dry to moist, no odor.  9.4 16 20 18 25 - CL SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  9.4 16 20 18 25 - CL SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	s).
9.4 9 18 18	
9.4 9 18 18	
9.4 9 18 18	- 1
and streaks, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2* diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	
9.4 18 OC-SG OW1b SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2" diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	
9.4 18 OC-SG OW1b SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2" diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	1
9.4 18 OC-SG OW1b SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2" diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	
9.4 18 OC-SG OW1b SILTY CLAY: brown (10YR4/3); low plasticity, soft; trace pebbles to 1/2" diameter; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	- 1
9.4 16 20 18 SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV 30.0  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV 30.0	- 1
9.4 18 20 18 SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV 30.0  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV 30.0	- 17
9.4 18 25 SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV 30.0  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV 30.0	1
9.4 16 20 18 SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV 30.0 SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV	
9.4 16 20 18 SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV 30.0 SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV	
9.4 16 20 18 illumination, dry to moist, no odor.  CL SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV	, MS
9.4 OC-SG SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV	(25
9.4 OC-SGL 30 SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV	5-7.
9.4 18 OC-SGL SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV	
9.4 18 OC-SGL SULTY CLAY: brown (10YR4/3): low plasticity, soft, no UV	
9.4 1 18 OC-SGLJ SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV	
OW1b 9 - illumination, dry to moist, no odor.	
-30-	
061699	
35.0	116
Continued Next Page  PAGE 1	05



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### BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 10500-24699-T4.FIELD BORING/WELL NUMBER OW-1b PROJECT NAME DATE DRILLED 6/16/99-6/18/99 Omega Chemical Continued from Previous Page RECOVERY (Inches) GRAPHIC BLOW U.S.C.S. PID (ppm) EXTENT SAMPLE DEPTH (ft. BGL) LITHOLOGIC DESCRIPTION WELL DIAGRAM SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV oc-s 10 75.2 18 18 OW1b illumination, dry to moist, no odor. 22 -35-061699 CL 40.0 SILTY CLAY: brown (10YR4/3); low plasticity, soft, UV OC-SG 18.8 18 OW1B illuminated small fragments, dry to moist, no odor. -40-061699 CL 45.0 Cement-SILTY CLAY: brown (10YR4/3); low plasticity, soft, UV OC-S-OC-S-OW1b Bentonite Grout 47.0 18 illuminated small fragments, dry to moist, no odor. 17 (0-96 ft bgs). -45-061699 CL 50.0 OC-SG SILTY CLAY: brown (10YR4/3); low plasticity, soft, UV 23.5 18 OW16 illuminated small fragments, dry to moist, no odor. -50-061699 CL 55.0 OC-S-OW1b SILTY CLAY: brown (10YR4/3); low plasticity, soft, UV 84.7 18 22 illuminated small streaks, dry to moist, no odor. -55-061699 CL Ā 60.0 SILTY CLAY: brown (10YR4/3); low plasticity, soft, UV OC-SG 211.7 18 OW16 illuminated precipitate, dry to moist, moderate to strong hydrocarbon odor. -60-061699 CL 65.0 4", Sch 40, MS OC-S-OW1b SILTY CLAY: dark yellowish brown (10YR4/4); low 7 Blank 122.3 18 18 plasticity, soft, UV illuminated precipitate and fragments, (0-110 ft bgs). dry to moist, moderate to strong hydrocarbon odor. -65-立 061699 CL 70.0 OC-S-OW1b 15 SILTY CLAY: brown (10YR4/3); low plasticity, stiff, UV 28.2 18 20 illuminated fragments and streaks, dry to moist, no odor. 22 -70-061699 CL

Continued Next Page

PAGE 2 OF 4

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# **BORING/WELL CONSTRUCTION LOG**

Fax: (949) 752-1307
PROJECT NUMBER 10500-24699-T4.FIELD BORING/WELL NUMBER OW-1b PROJECT NAME Omega Chemical DATE DRILLED 6/16/99-6/18/99

-		-		T			Continued from Previous Page	-	
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
1.5	14 28 30	18	OC-S- OW1b -75- 061699			CL	SILTY CLAY: brown (10YR4/3); low plasticity, stiff, UV illuminated fragments and streaks, dry to moist, no odor.		
1.5	12 28 31	18	OC-S- OW1b -80- 061699		-80 - - -	CL	SILTY CLAY: brown (10YR4/3); low plasticity, soft, UV illuminated streaks, dry to moist, no odor.	80.0	Cement- Bentonite Grou (0-96 ft bgs).
4.7	10 11 13	18		XXX	-85 - -	CL	SILTY CLAY: brown (10YR4/3); low plasticity, soft, UV illuminated streaks, dry to moist, no odor.	85.0	
28.2	11 14 20	18	OC-S- OW1b -90- 061699		-90 	CL	SILTY CLAY: brown (10YR4/3); low plasticity, soft, no UV illumination, dry to moist, no odor.	90.0	4*, Sch 40, MS Blank (0-110 ft bgs).
0.0	3 4 4 4	18		X00X	-95 95 	CL	SILTY CLAY: brown (10YR4/3); low plasticity, stiff, no UV illumination, dry to moist, no odor.	95.0	Bentonite Pellets (96-99 ft bgs).
0.0	3 4 6	18	OC-S- OW1b -100- 061899		-100 - - - - -	CL	SILTY CLAY: brown (10YR4/3); low plasticity, soft to firm; traces of coarse sand to fine gravel; no UV illumination, dry to moist, no odor.	100.0	Lonestar #2/12 Filter Pack (99-130 ft bgs)
0.0	3 3 6	18		XXXX	-105  	CL	SILTY CLAY: brown (10YR4/3); low plasticity, soft to firm traces of coarse sand to fine gravel; no UV illumination, dry to moist, no odor.	105.0	
0.0	5 5 9	18	OC-S OW1t -110- 06189	B	 -110  	CL	SILTY CLAY: brown (10YR4/3); low plasticity, firm, no UN illumination, dry to moist, no odor.	110.0	4*, SS, 20-slot Screen (110-120 ft bgs).
				П	- -115-		Continued Next Page	115.0	PAGE 3 OF



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# **BORING/WELL CONSTRUCTION LOG**

BORING/WELL NUMBER OW-1b 10500-24699-T4.FIELD JECT NUMBER DATE DRILLED 6/16/99-6/18/99 Omega Chemical JECT NAME

18	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WEL	L DIAGRAM
		XXX		CL		SILTY CLAY: brown (10YR4/3); low plasticity, firm, no UV illumination, dry to moist, no odor.	120.0		-4*, SS, 20-slot Screen (110-120 ft bgs).
18	OW1b -120-		-120 - - - -	CL		SILTY CLAY: brown (10YR4/3); low plasticity, soft to firm; traces of coarse sand to fine gravel; no UV illumination, dry to moist, no odor.	120.0		
18		XXXX	-125 - - -	CL		SILTY CLAY WITH GRAVEL: brown (10YR4/3); 85% silty clay, low plasticity, soft; 15% gravel in matrix, up to 1/2* diameter, angular to subrounded, low to moderate sphericity; no UV illumination, moist, no odor.	125.0		– Lonestar #2/1 Filter Pack (99-130 ft bgs
18		XDQX	-130 -	CL		SILTY CLAY: brown (10YR4/3); low plasticity, soft to firm; traces of coarse sand to fine gravel; no UV illumination, dry to moist, no odor.	130.0	**************************************	−TD = 130 ft b
									÷
	18	18 OW1b -120- 061899	-120- 061899	18 OC-S-OW1b	18 OC-S-OW1b	18 OC-S-OW1b -120-061899	SILTY CLAY: brown (10YR4/3); low plasticity, soft to firm; traces of coarse sand to fine gravel; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); 85% silty clay, low plasticity, soft; 15% gravel in matrix, up to 1/2" diameter, angular to subrounded, low to moderate sphericity; no UV illumination, moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft to firm; traces of coarse sand to fine gravel; no UV illumination,	SILTY CLAY: brown (10YR4/3); low plasticity, soft to firm; traces of coarse sand to fine gravel; no UV illumination, dry to moist, no odor.  SILTY CLAY: brown (10YR4/3); 85% silty clay, low plasticity, soft; 15% gravel in matrix, up to 1/2" diameter, angular to subrounded, low to moderate sphericity; no UV illumination, moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft to firm; traces of coarse sand to fine gravel; no UV illumination, 131.5	SILTY CLAY: brown (10YR4/3); low plasticity, soft to firm; traces of coarse sand to fine gravel; no UV illumination, dry to moist, no odor.  SILTY CLAY WITH GRAVEL: brown (10YR4/3); 85% silty clay, low plasticity, soft; 15% gravel in matrix, up to 1/2" diameter, angular to subrounded, low to moderate sphericity; no UV illumination, moist, no odor.  SILTY CLAY: brown (10YR4/3); low plasticity, soft to firm; traces of coarse sand to fine gravel; no UV illumination,



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# **BORING/WELL CONSTRUCTION LOG**

PROJI LOCA DRILL SAMP GROU TOP C	ECT NATION ING MILING NATION EL OF CASED BY	125 ETHOD METHOR EVATION	Ome	ega ( st Wh ollow Modi	24699- Chemic Dittier B Stem	T4.Fi al lvd, V Auge	Whittier, r t Spoon	BORING/WELL NUMBER OW DATE DRILLED 6/17/99	Sch 40, MS O-slot #2/12 tland Ceme	
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
0.0	5 9 10	18			- 5	CL		CONCRETE is 3 inches thick.  SILTY CLAY: brown (10YR4/3); 100% silty clay, low plasticity, stiff, soft, moist, no odor.  SILTY CLAY: dark brown (10YR3/3); 100% silty clay, low plasticity, soft, moist, no odor.	5.0	
0.0	5 5 14	18		XOXOX	- -10 - - -	CL		SILTY CLAY: dark brown (10YR3/3); 100% silty clay, low plasticity, soft, moist, no odor.	10.0	Cement- Bentonite Grou (0-50 ft bgs).
0.0	10 13 15	18		XX	- -15 - - -	CL		SILTY CLAY: dark brown (10YR3/3); 100% silty clay, low plasticity, soft, moist, no odor.	15.0	
0.0	6 8 19	18		XXXX	-20 - - - -	CL		SILTY CLAY: dark brown (10YR3/3); 100% silty clay, low plasticity, soft, moist, no odor.	20.0	
0.0	13 15 21	18		XXX	- -25 - - -	CL		SILTY CLAY: dark brown (10YR3/3); 100% silty clay, low plasticity, soft, moist, no odor.	25.0	4", Sch 40, MS Blank (0-60 ft bgs).
10.6	NA	18		XOX	-30 <del>-</del>	CL		SILTY CLAY: dark brown (10YR3/3); 100% silty clay, low plasticity, soft, moist, no odor.	30.0	
					- -35			Continued Next Page	35.0	

Continued Next Page



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# **BORING/WELL CONSTRUCTION LOG**

PROJECT NUMBER 10500-24699-T4.FIELD

BORING/WELL NUMBER OW-2

	1	P 77 19		1 1	-	-	1	Continued from Previous Page			
PID (ppm)	COUNTS	RECOVERY (Inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	w	ELL DIAGRAM
	8 12 19	18		XXX	-	CL		SILTY CLAY: dark brown (10YR4/3); 100% silty clay, low plasticity; trace coarse sand to 1/4" diameter gravel; firm, moist, no odor.			Cement- Bentonite Grou (0-50 ft bgs).
6.5	15 19 22	18		XXX	-40 - - - -	CL		SILTY CLAY: dark brown (10YR3/3); 100% silty clay, low plasticity, soft, moist, no odor.	40.0		
9.3	16 23 29	18	OC-S- OW2 -45- 061799		-45 - - -	Ċſ		SILTY CLAY: dark brown (10YR4/3); 100% silty clay, low plasticity; trace coarse sand to 1/4" diameter gravel; firm, moist, no odor.	45.0		4", Sch 40, MS Blank (0-60 ft bgs).
2.9	8 17 20	18		XXXX	50	CL		SILTY CLAY: dark brown (10YR4/3); 100% silty clay, low plasticity; trace coarse sand to 1/4* diameter gravel; firm, moist, no odor.	50.0		■ Bentonite Pellets
	9				55			SILT WITH SAND: brown (10YR4/3); 85% silt, loose, soft,	55.0	C10 150	(50-55 ft bgs).
	14 20	18		X	-	ML		slightly cohesive; 15% very fine sand; slightly moist, no odor.			Lonestar #2/12 Filter Pack (55-85 ft bgs).
.4	7 7 20	18	OC-S- OW2 -60- 061799	A .		SP SM		POORLY GRADED SAND WITH SILT: brown (10YR4/3); 90% sand, very fine to fine; 10% silt in matrix,; slightly moist, no odor.	60.0		
.9 1	10 14 22	18			- - - - - S	SP SM		POORLY GRADED SAND WITH SILT: gray (10YR5/1); 95% sand, very fine to fine; 5% silt in matrix; very moist, slightly cohesive, no odor.	65.0		-4*, SS, 20-slot, Screen
		18		-	- - - - S	Р		POORLY GRADED SAND WITH SILT: gray (10YR5/1); 95% sand, very fine to fine; 5% silt in matrix; very moist, slightly cohesive, no odor.	70.0		(60-80 ft bgs).



# BORING/WELL CONSTRUCTION LOG

PAGE 3 OF 3

Telephone: (949) 752-5452 Fax: (949) 752-1307 BORING/WELL NUMBER 10500-24699-T4.FIELD PROJECT NUMBER DATE DRILLED 6/17/99 PROJECT NAME Omega Chemical Continued from Previous Page GRAPHIC RECOVERY (Inches) SAMPLE ID. BLOW U.S.C.S. PID (ppm) EXTENT DEPTH (ft. BGL) WELL DIAGRAM LITHOLOGIC DESCRIPTION SILTY CLAY: dark grayish brown (10YR4/2); 100% silty 13 4", SS, 20-slot, clay, low plasticity, soft, moist, no odor. 18 0.0 21 Screen 30 (60-80 ft bgs). CL 80.0 CLAYEY SAND: brown (10YR4/3); 80% sand, very fine to OC-S-OW2 12 Lonestar #2/12 fine: 20% clay in matrix and as balls, moderate plasticity; 18 0.0 18 Filter Pack saturated, no odor. -80-24 (55-85 ft bgs). 06179 SC 85.0 TD = 85 ft bgs. SILTY CLAY: dark grayish brown (10YR4/2); 100% silty CL clay, low plasticity, soft, moist, no odor. 86.5 0.0 NA 18

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Irvine, CA 92612 Telephone: (949) 752-5452 Fax: (949) 752-1307

# **BORING/WELL CONSTRUCTION LOG**

DATE DRILLED			UMBER				T4.FIEL	D		BORING/WELL NUMBER OW-	3	-		
SAME				-				***	0.4	DATE DRILLED 6/15/99	Cab 40 MC	Diant		
SAMPLING METHOD GROUND ELEVATION   GRAVEL PACK TYPE   Lonestant 82/12   Ground Delevation   Ground Delevation   Ground Delevation   Ground Marting   Ground   Ground Marting   Ground   Ground Marting   Ground   Ground Marting   Ground Marting   Ground Marting   Ground														
Companies   Comp							200							
DEPTH TO WATER							1							
Comparison   Com				_							dana cem	C116070 D	omormore ro gas	
REMARKS    Remarks   Remar				ike Hoffr	nan					ODOLIND WATER ELEVATION				
0.0   0.0			-						*					
0.0   0.0	PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	(ft. BGL)	U.S.C.S.	LOG	LITHO	PLOGIC DESCRIPTION	CONTACT	W	ELL DIAGRAM	
10	0.0				}	+	12	100	CONCRETE is 3 inc	hes thick.	0.3	M	<b>4</b>	
0.0   3   18   3   5   5   5   5   5   5   5   5   5				K	<b>J</b>	-			SILTY CLAY: brown plasticity, soft, moist	(10YR4/3); 100% silty clay, low , no odor.				
0.0   3   18   3   5   5   5   5   5   5   5   5   5				K	UT.	-	CL	369					<b>X</b>	
3 18				k	1	-		36					<b>(4)</b>	
3 18				V	1	-		88			5.0			
10.0	32.15				5	$\neg$		360	SILTY CLAY: brown	(10YR4/3); 100% silty clay, low	0.0		× 1	
0.0   18   18   2   -	0.0		18	5	₹	-		36	plasticity, soft, moist	, no odor.			<b>(4)</b>	
0.0					+	-	CL	36						
0.0   6   18					+	-		33			8		8	
0.0   6   18					-	-		36			400			
0.0   6   18   18   -		4	1 1		10	-	-a	88	SILTY CLAY: brown	(10YR4/3): 100% silty clay, low	10.0			
0.0	0.0	6	18		1	-		260	plasticity, soft, moist	, no odor.			(0-53 ft bgs).	
0.0		10	1 1		7	-	[	30						
0.0					-	- "	CL	36			1		<b>X</b>	
0.0					-	-		36					<b>3</b>	
0.0   5   18   18   20   20   20   20   20   20   20   2		-	1		-15	-		88	OUT OF AN A	(10VD4/0): 100% - ille: -la::- la::-	15.0			
0.0   10	0.0		18		3	-		36	plasticity, stiff, moist	, no odor.			8	
0.0   5   7   18   -					-	_		22					<b>(</b>	
0.0   5						_	CL	364						
0.0   5						_		貓			-1		§	
0.0   7   18   -			1					36			20.0		<b>3</b> 1	
0.0 10 10 18 25	0.0	5	18		<b>1</b> 20			36	SILTY CLAY: brown	(10YR4/3); 100% silty clay, low				
0.0 10 12 18 25 — SILTY CLAY: brown (10YR4/3); 100% silty clay, low plasticity, soft, moist, no odor.  SILTY CLAY: brown (10YR4/3); 100% silty clay, low plasticity, soft, moist, no odor.  SILTY CLAY: brown (10YR4/3); 100% silty clay, low plasticity, stiff, moist, no odor.  SILTY CLAY: brown (10YR4/3); 100% silty clay, low plasticity, stiff, moist, no odor.				1	4	- S		36	prasticity, still, moist	, 110 0001.			§	
0.0 10 12 18							CL	38						
0.0 10 12 18			1 1		T	-		88						
0.0 10 12 18						-					25.0		<b>3</b>	
0.0   12   18   18	0.0				25			260	SILTY CLAY: brown	(10YR4/3); 100% silty clay, low			Blank	
0.0   8   18   30   SILTY CLAY: brown (10YR4/3); 100% silty clay, low plasticity, stiff, moist, no odor.	0.0		18		₹	-		36	plasticity, soft, moist	, no odor.			(0-63 ft bgs).	
0.0 8 12 18			1		+	-	CI D	貓						
0.0   8   12   18					+	-								
0.0   8   12   18				1	-	-					13	M	§	
0.0 12 18 plasticity, stiff, moist, no odor.		8			30	-		20	SILTY CLAY- brown	(10YR4/3): 100% silty clay low	30.0			
CL	0.0	12	18		3	-			plasticity, stiff, moist	, no odor.			<b>3</b>	
35.0		16		f	-	-							<b>∄</b> Ⅰ	
					-	-	CL	30						
					-	-		30				N N	3 I	
Appronectives the second secon					35	,		X	C	ontinued Next Page	35.0	KO K	4	

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### BORING/WELL CONSTRUCTION LOG

PAGE 2 OF 3

PROJECT NUMBER

10500-24699-T4.FIELD

**BORING/WELL NUMBER** 

DATE DRILLED 6/15/99 Omega Chemical PROJECT NAME Continued from Previous Page SAMPLE ID. GRAPHIC RECOVERY (inches) BLOW U.S.C.S. PID (ppm) EXTENT DEPTH (ft. BGL) WELL DIAGRAM LITHOLOGIC DESCRIPTION SILTY CLAY: brown (10YR4/3); 100% silty clay, low 10 Cement-18 plasticity, stiff, moist, no odor. 0.0 13 **Bentonite Grout** 20 (0-53 ft bgs). CL 40.0 SILTY CLAY: brown (10YR4/3); 100% silty clay, low OC-S-10 18 plasticity, stiff, moist, no odor. 13.3 13 оwз 19 -45-061599 CL 45.0 4", Sch 40, MS SILTY CLAY: brown (10YR4/3); 100% silty clay, low 12 Blank 0.0 18 plasticity, stiff, moist, no odor. 16 (0-63 ft bgs). 22 CL 50.0 WELL GRADED SAND: dark yellowish brown (10YR3/4); OC-S-14 OC-S-OW3 95% sand, very fine to very coarse, angular to rounded, 0.0 18 19 low to high sphericity; 5% gravel to 1/4" diameter, angular 29 -50to subrounded, low to moderate sphericity; trace silt in 061599 SW matrix; moist, no odor. 55.0 NO RECOVERY: assuming sand and gravel. 22 Bentonite 0.0 18 28 Pellets (53-58 ft bgs). 31 SW 60.0 Lonestar #2/12 SILTY CLAY: brown (10YR4/3); 100% silty clay, low Filter Pack 21 0.0 18 plasticity, soft, moist, no odor. 28 (58-85 ft bgs). 31 CL 65.0 SILTY CLAY: brown (10YR4/3); 100% silty clay, low 17 0.0 plasticity, soft, moist, no odor. 18 25 40 CL 4", SS, 20-slot, Screen (63-83 ft bgs). 70.0 CLAYEY GRAVEL: brown (10YR4/3); 60% gravel, 12 0.0 17 18 angular to subrounded, low to moderate sphericity; 35% silty clay, low plasticity; 5% well graded sand, very fine to 23 coarse; moist, no odor. GC 75.0 Continued Next Page

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## **BORING/WELL CONSTRUCTION LOG**

PROJECT NUMBER \_

10500-24699-T4.FIELD

PROJECT NAME Omega Chemical

BORING/WELL NUMBER OW-3

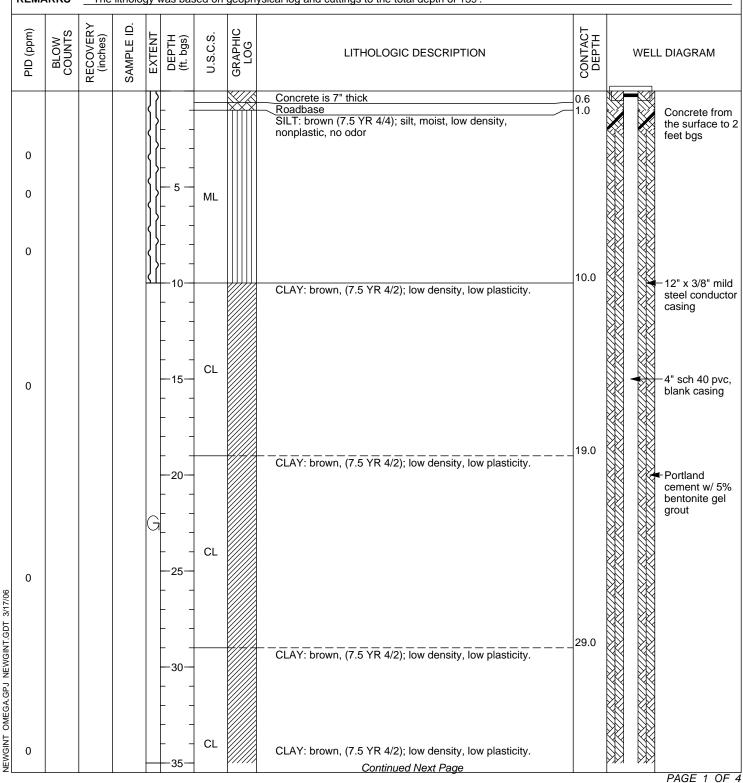
DATE DRILLED 6/15/99

								Continued from Previous Page		<del></del>
PID (ppm)	BLOW	RECOVERY (Inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
.0	8 18 20	18	OC-S- OW3 -75- 061599		-	CL		SILTY CLAY: brown (10YR4/3); 100% silty clay, low plasticity, soft; trace gravel; moist, no odor.		4*, SS, 20-slo Screen (63-83 ft bgs).
0	5 9 14	18		XOX	-80 <del></del>	CL		SILTY CLAY: brown (10YR4/3); 100% silty clay, low plasticity, soft; trace gravel; moist, no odor.	80.0	Lonestar #2/1 Filter Pack (58-85 ft bgs).
.0	10 31 21	18		XD-QX	- -85	CL		SILTY CLAY: brown (10YR4/3); 100% silty clay, low plasticity, stiff; trace gravel; moist, no odor.	85.0 86.5	TD = 85 ft bgs
		200								
								~		

### **BORING/WELL CONSTRUCTION LOG**

<b>PROJECT NUMBER</b> 10500-37240-T1.GW-OW3B	BORING/WELL NUMBER OW-3B
PROJECT NAME Omega Chemical	DATE DRILLED 3/6/06
LOCATION 12511 Putnam St, Whittier, CA	CASING TYPE/DIAMETER Sch 40, PVC / 4"
DRILLING METHOD Mud Rotary	SCREEN TYPE/SLOT 4" Stainless Steel Wire Wrap / 0.010"
SAMPLING METHOD Mud Rotary Cuttings	GRAVEL PACK TYPE Monterey #2/12
GROUND SURFACE ELEVATION (FT MSL) 195.57	GROUT TYPE/QUANTITY Portland Cement/5% Bentonite
TOP OF CASING ELEVATION (FT MSL) 195.14	STATIC WATER LEVEL (FT BELOW TOC) 73.76
LOGGED BY W.F. Grove	GROUND WATER ELEVATION (FT MSL) 121.38

REMARKS The lithology was based on geophysical log and cuttings to the total depth of 139'.





# **BORING/WELL CONSTRUCTION LOG**

 PROJECT NUMBER
 10500-37240-T1.GW-OW3B

 PROJECT NAME
 Omega Chemical

BORING/WELL NUMBER OW-3B

PROJEC	TIVANLE		Jyu	Chem	ioui		Continued from Previous Page		
PID (ppm)	COUNTS RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
			-	 			CLAY: brown, (7.5 YR 4/2); low density, low plasticity.  CLAY: brown, (7.5 YR 4/2); low density, low plasticity.	39.0	
0				40	CL			48.0	12" x 3/8" mild steel conductor casing
0		ı	G	 - 50-  	SP		SAND: light brown, (7.5 YR 6/4); poorly graded, fine to medium grained, subangular to subrounded.	54.0	4" sch 40 pvc, blank casing
			-	 55   	SP		SAND: light brown, (7.5 YR 6/4); poorly graded, fine to medium grained, subangular to subrounded.		Portland cement w/ 5% bentonite gel grout
0			-	   65 	CL		CLAY: yellowish brown, (10 YR 5/4); 90% clay, medium density, low plasticity; 10% sand, poorly graded, fine to medium grained, subangular to subrounded.	_61.0	
0			-	 - 70-  	<b>U</b> L			74.0	<b>▼</b>
			-	 75			CLAY: brown, (7.5 YR 4/2); medium density, low plasticity.  Continued Next Page	77.0	PAGE 2 OF



# **BORING/WELL CONSTRUCTION LOG**

**PROJECT NUMBER** <u>10500-37240-T1.GW-OW3B</u>

BORING/WELL NUMBER OW-3B PROJECT NAME Omega Chemical DATE DRILLED 3/6/06

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WEL	L DIAGRAM
					   80-	CL		CLAY: yellowish brown, (10 YR 5/4); 90% clay, medium density, low plasticity; 10% sand, poorly graded, fine to medium grained, subangular to subrounded.	81.0		
0					  	CL		SANDY CLAY: brown, (7.5 YR 4/2); 70% clay, slightly plastic, medium density, low plasticity; 30% sand, poorly graded, fine to medium grained, angular to subrounded, rock fragments.	86.0		Portland cement w/ 5% bentonite gel grout
0					 	CL		CLAY: brown, (7.5 YR 4/2); medium density, low plasticity.	89.0		−4" sch 40 pvo blank casing
0				G	 90  	CL		SANDY CLAY: brown, (7.5 YR 4/2); 90% clay, low density, medium plasticity; 30% sand, poorly graded, fine to medium grained, angular to subrounded.			-12" x 3/8" mi steel conduc casing
					95  	CL		SANDY CLAY: brown, (7.5 YR 4/2); 60% clay, low density, medium plasticity; 40% sand, poorly graded, fine grained, subangular to subrounded.	96.0		
0					 100 	ML		SANDY SILT: brown, (7.5 YR 4/2); 60% silt; 20% sand, poorly graded, fine to medium grained, subangular to subrounded; 20% clay, low density, low plasticity.	99.0		← Hydrated
					  105- 	ML		SANDY SILT: brown, (7.5 YR 4/2); 85% silt; 10% sand, poorly graded, fine to medium grained, subangular to subrounded; 5% clay, low density, low plasticity.	104.0		bentonite chi ←Transition sa #0/30 sand
0					  110	ML		SANDY SILT: brown, (7.5 YR 4/2); 75% silt; 15% sand, poorly graded, fine to medium grained, subangular to subrounded; 10% clay, low density, medium plasticity.	109.0		Monterey sar (106 - 126 febgs)
0					 	SP		SAND: light brown, (7.5 YR 6/4); 95% sand, poorly graded, very fine to medium, subangular to subrounded; 5% silt, nonplastic.	112.0		steel, 0.010" wire wrap _screen (112 - 122 ft bgs)
					<del>-1</del> 15-			Continued Next Page			



# **BORING/WELL CONSTRUCTION LOG**

**PROJECT NUMBER** <u>10500-37240-T1.GW-OW3B</u>

Omega Chemical DATE DRILLED

BORING/WELL NUMBER OW-3B

PROJ	JECT N	AME	_ Om	ega	Chemi	ical		<b>DATE DRILLED</b> 3/6/06		
								Continued from Previous Page	1	
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
0					  - 120	SP		SAND: light brown, (7.5 YR 6/4); 95% sand, poorly graded, very fine to medium, subangular to subrounded; 5% silt, nonplastic.	122.0	4" stainless steel, 0.010" wire wrap screen (112 - 122 ft bgs)
0				G	  -125- 	SC		CLAYEY SAND: brown (7.5 YR 4/2); 60% sand, poorly graaded, fine to medium grained, subangular to subround; 40% clay, low density, low plasticity.		No. 2/12  Monterey sand (106 - 126 feet bgs)  - Hydrated bentonite chip:
0					130 	SP		GRAVELLY SAND: light brown (7.5 YR 6/4); 85% sand, fine to coarse, mostly medium, angular to subrounded; 15% gravel, poorly graded, fine, angular to subrounded.	129.0	Sand backfill, #2/16 sand
					   140 -				_139.0	
					- 145 - - -					
					150 - - - - - 155 -					

# CDM

NEWGINT OMEGA.GPJ NEWGINT.GDT

0.0

0.0

12

12

CL

CL

now.

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# BORING/WELL CONSTRUCTION LOG

PROJE LOCAT DRILLI SAMPI GROU	ING ME LING M ND ELE F CASI ED BY	ME	Ome 4 East Ho 182.	White Market 182	30697-T Chemica ittier Blv Stem A E Contin 2.73	C52-130 C5B.IN I I Vd, Whi uger ous Co	7 (FAX) ISTALL Ittier, CA	., east of Lambert Rd.	SCREEN TYPE/SLOT 4" Stainless S GRAVEL PACK TYPE GROUT TYPE/QUANTITY Portlan STATIC WATER LEVEL (feet btoc)	12	1 / 4" Wrap / 0.020" 5% Bentonite/210 gal
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	(ft. BGL)	U.S.C.S.	GRAPHIC LOG	ШТН	IOLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
0.0		30				CL		SILTY CLAY: brown ( soft, moist, no odor.  Trace gravel at 9-feet, SILTY CLAY: brown ( soft, moist, no odor; ir maximum diameter. F	own (10YR3/3); 100% silty clay, slightly	0.3 2.0 5.0 10.0	4", Sch 40, MS Blank (0.3 - 49.8 ft bgs)
0.0		0			20-	CL		indicate a silty clay.	ck probably in front of sampler. Cuttings  (10YR4/3); 100% silty clay, slightly plastic,	20.0 25.0 26.5	e-Portland Cement w/5% Bentonite Grout (2 - 42.5 ft bgs)

SILTY CLAY: brown (10YR4/3); 100% silty clay, slightly plastic,

SILTY CLAY: brown (10YR4/3); 100% silty clay, slightly plastic,

Continued Next Page

firm, moist.

NO RECOVERY: attached a standard split spoon to resample.

firm, moist.

NO RECOVERY: Broke some of a rock up and out, may work

32.0

35.0

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### BORING/WELL CONSTRUCTION LOG

PAGE 2 OF 3

BORING/WELL NUMBER

10500-30697-TO5B.INSTALL OW-4A DATE DRILLED 3/15/01 PROJECT NAME Omega Chemical Continued from Previous Page SAMPLE ID. GRAPHIC LOG PID (ppm) RECOVERY (inches) BLOW U.S.C.S. DEPTH (ft. BGL) EXTENT LITHOLOGIC DESCRIPTION WELL DIAGRAM NO RECOVERY: Rock probably in front of sampler. 0 4", Sch 40, MS Blank (0.3)49.8 ft bgs) 40.0 SILTY CLAY: brown (10YR4/3); 100% silty clay, slightly plastic, 0.0 24 CL 41.0 Portland Cement firm, moist, ML CLAYEY SILT: brown (10YR4/3); 100% clayey silt, inelastic, 42.0 w/5% Bentonite Grout (2 soft, moist, no odor 42.5 ft bgs) NO RECOVERY 45.0 Bentonite Chips CLAYEY SILT: brown (10YR4/3); 100% clayey sill, inelastic, 50.4 ML 46.0 (42.5 - 47.7 ft soft, moist, no odor. bgs) SILTY CLAY: brown (10YR4/3); 100% silty clay, nonplastic, soft to moderately hard, firmer, moist, no odor. CL Lonestar #2/12 49.2 Filter Pack NO RECOVERY 50.0 (47.7 - 75.7 ft SANDY SILT: yellowish brown (10YR5/4); 70% silt, soft; 30% 45.6 0.0 bgs) poorly graded sand, very fine to fine, subrounded. ML 52.2 SILTY SAND: brown (10YR5/3); 85% poorly graded sand, very SM fine to fine, subrounded; 15% silt, soft. 53.8 NO RECOVERY Ţ 55.0 SILTY SAND: brown (10YR5/3); 85% poorly graded sand, very 0.0 51.6 fine to fine, subrounded; 15% silt, soft. SM 57.0 SILTY CLAY WITH SAND: brown (10YR4/3); 55% clay, CL 58.0 nonplastic, firm; 25% silt; 20% poorly graded sand, very fine to fine\_subrounded; moist\_no odor\_ SP POORLY GRADED SAND: brown (10YR4/3) and pale brown 59.3 60.0 4", 20-slot, SS (10YR6/3); 100% sand, fine to medium, subangular to subrounded; very moist. Encountered groundwater at 58-feet Wire Wrap Screen 0.0 50.4 (49.8 - 69.8 ft bas NO RECOVERY bgs) SP POORLY GRADED SAND: brown (10YR4/3) and pale brown (10YR6/3); 100% sand, fine to medium, subangular to subrounded; saturated. Encountered groundwater at 58-feet bgs 64.2 SM SILTY SAND: pale brown (10YR6/3); 65% poorly graded sand, very fine, subrounded; 35% silt, enough to limit permeability; 65.0 moist, no odor. 0.0 39.6 SM NO RECOVERY 66.2 SILTY SAND: pale brown (10YR6/3); 65% poorly graded sand, OMEGA.GPJ NEWGINT.GDT 12/20/01 very fine, subrounded; 35% silt, enough to limit permeability; SW moist, no odor. WELL GRADED SAND: pale brown (10YR6/3); 100% sand, fine 68.3 to coarse, subangular to subrounded, saturated, no odor NO RECOVERY 70.0 0.0 60 WELL GRADED SAND (possible sluff): pale brown (10YR6/3); 100% sand, fine to coarse, subangular to subrounded, saturated, SW no odor. 4". 20-slot, SS 73.0 Wire Wrap Screen POORLY GRADED SAND: pale brown (10YR6/3); 100% sand, (69.8 - 74.8 ft SP fine to medium, increasing fineness with depth, subangular to bgs) subrounded, saturated, no odor. 75.0 Continued Next Page

# **CDM**

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### **BORING/WELL CONSTRUCTION LOG**

10500-30697-TO5B.INSTALL **BORING/WELL NUMBER** PROJECT NUMBER OW-4A PROJECT NAME DATE DRILLED Omega Chemical 3/15/01 Continued from Previous Page RECOVERY (inches) SAMPLE ID. BLOW GRAPHIC CONTACT PID (ppm) DEPTH (ft. BGL) U.S.C.S. LITHOLOGIC DESCRIPTION WELL DIAGRAM 48 POORLY GRADED SAND: pale brown (10YR6/3); 100% sand, 0.0 SP 76.0 fine to medium, increasing fineness with depth, subangular to subrounded, saturated, no odor. SW WELL GRADED SAND WITH GRAVEL: brown (10YR4/3); 70% sand, fine to coarse, subrounded to subangular, low to moderate sphericity; 30% gap graded gravel, fine to coarse, 2-inch CL (76 - 80 ft bgs) 79.0 maximum diameter, angular to subrounded, low to moderate sphericity; saturated, no odor. 80.0 80 GRAVELLY CLAY: brown (10YR4/3); 60% clay, nonplastic, moderately firm; 25% gap graded gravel, fine to coarse, 2-inch maximum diameter, angular to subrounded, low to moderate sphericity; 15% gap graded sand, fine to coarse, subangular to subrounded, low to moderate sphericity; moist to saturated, no NO RECOVERY Total Depth of Borehole is 80 feet bgs. NEWGINT OMEGA.GPJ NEWGINT.GDT 12/20/01

NEWGINT OMEGA.GPJ NEWGINT.GDT 12/20/01

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6	72					752-545 752-130	52 07 (FAX)		BORING/WELL CO	ONSI	RUCI	ION LOG
PROJ	ECT N	UMBER	_1	0500	-30697-	TO5B.IN	NSTALL		BORING/WELL NUMBER OW-5			
PROJ	ECT NA	AME	Om	nega	Chemica	al			DATE DRILLED 8/6/01			
LOCA	TION	125	04 Eas	st Wi	hittier BI	vd, Whi	ttier, CA		CASING TYPE/DIAMETER Sch 40	), PVC / 4	*	
DRILL	ING ME	ETHOD		lollov	v Stem A	Auger			SCREEN TYPE/SLOT 4" Stainless	Steel Wir	e Wrap / 0.0	20"
SAMP	LING N	NETHOD	) _	СМ	E Contin	nous Co	re		GRAVEL PACK TYPE Monterey #2	/12		
GROL	IND EL	EVATIO	N	15	2.68					nd Cemen	V5% Benton	ite/210 gal
	OF CAS			1.96					STATIC WATER LEVEL (feet btoc)	28.18		
LOGG REMA	ED BY	Mi	ke Hol	fmar	n				GROUND WATER ELEVATION	23.78		
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	ЦТН	OLOGIC DESCRIPTION	CONTACT	WE	LL DIAGRAM
			0)	13				ASPHALT is 6-inches the	sick	-0.5		
		- 60				SM		SILTY SAND; very dark	nick, gray (10YR3/1); 85% poorly graded is silt in matrix; moist; slightly cohesive;	5.0		—4-inch, Sch 40
3.8		60							(10YR3/2); 100% clay, nonplastic, merous white inclusions.			PVC, blank casing (0-30 ft bgs)
0		60			10  	CL		CLAY; as above except gravel with subangular	t brown (10YR4/3) and contains trace fine clasts.			-Neat Cement with 5% Bentonite Grout (0-20 ft bgs)
0		60			-15-				rk yellow brown (10YR4/4); 85% clay, f; 15% fine sand; moist.	15.0		
0		60						CLAY; brown (10YR4/3 moist; numerous white	i); 100% clay; nonplastic, medium stiff;	16.5		
				A								♣ Bentonite Seal (20-25 ft bgs)
0		60		V		CL			5.5 feet) t is low plastic; contains trace black n (Fe) staining (weathering).		¥	+2/12 Monterey Sand Filter Pack (25-51 ft bgs)
					- 30  			CLAY; as above except mica; wet; lacks black a	dark greenish brown (10YR4/2); abundant and white inclusions.			–4", 20-slot, SS Wire Wrap Screen
		1					VIIII			ALC:	F. T	(30-50 ft bas)

Continued Next Page

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# **BORING/WELL CONSTRUCTION LOG**

PROJECT NUMBER

10500-30697-TO5B.INSTALL

BORING/WELL NUMBER

OW-5

				П			TI	Continued from Previous Page		-	
FIC (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	OEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	W	ELL DIAGRAM
0		48		V				NO RECOVERY (35-36 feet)	36.0	SHS.	
				H	-	ML		SILT; very dark brown (10YR3/2); 100% silt, low plasticity, medium stiff; abundant mica; wet.			#2/12 Montere Sand Filter Pa (25-51 ft bgs)
		42		0	-40-	SM		SILTY SAND; very dark green brown (10YR3/2); 70% sand, fine; 30% silt in matrix; micaceous; wet. NO RECOVERY (40-41.5 feet)	39.0		
3						sw		SILTY SAND; as above.  SAND; olive brown (2.5Y4/3); 100% sand, fine to coarse grained, subrounded to subangular, well graded; trace fine gravel, diameters to 1/4 inch, subangular.	42.5		#2/12 Monterey Sand Filter Pad (25-51 ft bgs)
				0	-45	SP		SAND: lithology based on the response of the drill rig.	45.0		
					-50				52.0		<b>∢</b> Slough
		-									

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# BORING/WELL CONSTRUCTION LOG

PAGE 1 OF 2

PROJE LOCAT DRILL SAMP GROU TOP O	ECT NATION ING MELING M ND ELIT OF CASI	1250 ETHOD METHOD EVATION ING W.	Ome 04 Eas H 170 F. Gro	ega ( t Wh ollow CME 170 .54	Stem A Contin	d, Whit	tier, CA	th of Washington Blvd.	SCREEN TYPE/SLOT 4" Stainless GRAVEL PACK TYPE GROUT TYPE/QUANTITY Portlar STATIC WATER LEVEL (feet bloc)	12	e Wrap / 0.020** t/5% Bentonite/	
(mdd)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	OEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	цтн	OLOGIC DESCRIPTION	CONTACT	WELL	DIAGRAM
				{}		CL		ASPHALT is 4-inches the ROAD BASE  SILTY CLAY: dark graslightly plastic, moist, n	yish brown (10YR4/2); 100% silty clay,	2.0		
0.0		36		V	- 5 -  	CL		SILTY CLAY: brown (1 100% silty clay grading 1/2-inch maximum dian	10YR5/3) with heavy mottling from 7' to 8'; to clay, slightly plastic; trace gravel, fine, neter; moist, no odor.	8.0		
0.0		55.2		V	10  	CL		clay, 15% silt, slightly p	IOYR4/3) moderate to heavy mottling; 85% plastic; trace gravel; moist, no odor.  3) mottled; 90% clay, slightly plastic; 10% aximum diameter, increasing with depth;	12.0		4", Sch 40, MS Blank (0.3 - 38 ft bgs)
0.0		36.08		0	- 15  	ML		NO RECOVERY CLAYEY SILT: brown trace gravel, fine, 3/4-i	(10YR4/3) mottling; 100% clayey silt, firm; nch maximum diameter; moist, no odor.	15.0		•
0.0		60		0	20			SILTY CLAY: brown ( nonplastic, firm, moist,	10YR4/3) slight mottling; 100% clay, no odor.	20.0		Portland Cement w/5% Bentonile Grout (2 - 30.5 ft bgs)
0.0		55.2		V		CL		SILTY CLAY: brown ( nonplastic, firm, moist,	10YR4/3) slight mottling; 100% clay, , no odor.	29.6		
0.0		47		Q	30-	CL		NO RECOVERY SILTY CLAY: brown ( nonplastic, firm, moist	10YR4/3) slight mottling; 100% clay, , no odor.	30.0		-Bentonite Chips (30.5 - 36 ft bgs)
				C	35-		/AZY/	NO RECOVERY		35.0		

18881 Von Karman Avenue, Suite 650

	ECT NU		_1	0500	-30697-		07 (FAX) NSTALL	BORING/WELL NUMBER OW-6			
PROJ	IECT NA	ME	_ Om	ega	Chemica	al	1	DATE DRILLED 3/16/01			
								Continued from Previous Page	_		
(mdd)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WE	ELL DIAGRAM
0.0		60		V		CL		SILTY CLAY: brown (10YR4/3) slight mottling; 100% clay, nonplastic, firm, moist, no odor.  SANDY SILT: brown (10YR4/3); 70% silt, moderately soft; 30%	36.8	333	
						ML SM ML		poorly graded sand, very fine, subrounded; moist, no odor.  SILTY SAND: brown (10YR4/3); 70% poorly graded sand, very fine, subrounded; 30% silt, soft; moist, no odor.  SANDY SILT: brown (10YR4/3); 70% silt, moderately soft; 30%	38.2 39.2 40.0		4", 20-slot, S
0.0		39.6		H		SP		poorly graded sand, very fine, subrounded; moist, no odor.  POORLY GRADED SAND: brown (10YR4/3); 100% sand, very fine to fine, subrounded; trace silt; moist, no odor.  SILTY SAND: brown (10YR4/3); 70% sand, very fine to fine,	42.2 42.8		Wire Wrap So (38 - 58 ft bg
		0		0	  -45-	SP	200	subrounded; 30% sill, soft; moist, no odor.  POORLY GRADED SAND: pale brown (10YR6/3); 100% sand, fine to medium, subangular to subrounded; trace sill; wet, no odor.  NO RECOVERY	43.3		
				0							
0.0		42		V	-50- 	SP		POORLY GRADED SAND (SLUFF): brown (10YR5/3); 100% flowing sand, fine, some medium, trace coarse, saturated, no odor.	50.0		Lonestar #2/ Filter Pack (36 - 59 ft bg
				0			333	NO RECOVERY	53.5 55.0		
0.0		60		V	55 			POORLY GRADED SAND (SLUFF): brown (10YR5/3); 100% flowing sand, fine, some medium, trace coarse, saturated, no odor.	55.0		
0.0		18				SP					Fill - 60 ft bgs).
				A	-			Total Depth of Borehole is 61.5 feet bgs.	61.5		

# CDM

NEWGINT OMEGA.GPJ NEWGINT.GDT \$/20/02

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### BORING/WELL CONSTRUCTION LOG

PAGE 1 OF 3

PROJ LOCA DRILL SAMP GROU TOP C LOGG REMA	ECT NATION LING ME LING M IND ELL DF CASI EED BY RKS	125	Om 04 Eas H	ega ( st Wh lollow Mod 21: 01	Stem A dified CA 3.34	al vd, Whil Auger A Split S	poon		SCREEN TYPE/SLOT 4" Stainless S GRAVEL PACK TYPE Monterey #2/" GROUT TYPE/QUANTITY Portland STATIC WATER LEVEL (feet bloc)	76.00 16.01	e Wrap / 0.020** nt/5% Bentonite
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID	EXTENT	OEPTH (ft. BGL)	U.S.C.S.	GRAPHIC	LITH	OLOGIC DESCRIPTION	CONTACT	WELL DIAGRAM
				17				CONCRETE is 8 inches	thick.	0.7	
	8,9, 10	12			5	CL			(3); slightly plastic, soft, moist; minor rock.	6.5	
	4,7.	14		X	-	ML		CLAYEY SILT: brown	(7.5YR4/3); very slightly plastic, soft,	7.5	
0	5,6, 11,12 3,11, 13 7,14,	20 12 14			 - 10-	CL		SILTY CLAY: brown (7	7.5YR4/3); very slightly plastic, soft, % coarse sand; trace gravel to 25 mm.		4" diameter, sch 40, mild steel blank (0-70.89 ft bgs).
0	16 9,7, 14,16	21								15.0	
	11,12, 19 9,14,	16		¥					<li>(3); slightly plastic, moderately firm, moist; (5mm; no staining or odor.</li>		
Ó	16 12,18, 20,22	23		Ŷ		CL					
	3,9, 14	18		X	- 20			1" thick, medium to coa		21.5	Portland cement w/5% bentonite grout (2-60.6 ft bgs).
	10,16, 21	18		X				SILTY CLAY: brown (7 silt; trace gravel to 10 n	7.5YR4/3); slightly plastic, soft, moist; 35% nm; no staining or odor.		(2-60.6 it bgs).
0	11,14, 20,22	22		X							
	5,9, 16 11,16,	10		X	- 25	CL					
0	23 8,12,	24									
	15,26			M	_ 2	ML			i); nonplastic to very slightly plastic; 20%	30.0	
	9,13, 21 6,18,	18		Y	- 30	CL		\coarse, well graded, and	/3); nonplastic to very slightly plastic, firm,		
0	20									33.0	
Ü	12,13, 22,30	22		X		CL			(3), slightly mottled; nonplastic to very pist; 15% silt; no staining or odor.	35.0	

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# **BORING/WELL CONSTRUCTION LOG**

PAGE 2 OF 3

PROJECT NUMBER 10500-30697-TO5B.INSTALL PROJECT NAME

Omega Chemical

BORING/WELL NUMBER

OW-7

DATE DRILLED 3/13/02

PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WEL	L DIAGRAM
0	7,7, 22 12,17, 24 10,17, 20,24 18,20, 30	12 10 23 18		XXXX	   - 40-	CL		SILTY CLAY: brown (7.5YR4/3); very slightly plastic, firm, moist; 30% silt; no staining or odor.	41.5		-4" diameter, so 40, mild steel blank
0	12,19, 22 10,11, 16,30	18 18		X		ML		CLAYEY SILT: brown (7.5YR4/3); very slightly plastic, soft, moist; 35% clay; 5% very fine sand; no staining or odor.  SILTY CLAY: brown (7.5YR4/3); very slightly plastic, firm, moist, root structures filled with very light brown clay; 20% silt;	43.0		(0-70.89 ft bgs
	5,7, 21 17,18, 20	12 18		X	-45- 			trace coarse sand; no staining or odor.			
0	11,20, `22,23 5,19, 20	18		X	- -50-	CL					Portland ceme w/5% bentonite grout
0	16,22, 25 14,27, 30,34	16		X				Increase in very light brown clay filling cracks.	55.0		(2-60.6 ft bgs)
	17,20, 32 29,30, 57	16		X		CL		SILTY CLAY: brown (7.5YR4/3); very slightly plastic, firm, moist, root structures filled with very light brown clay; 20% silt; 5% gravel, 5 to 25 mm diameter, angular; trace coarse sand; no staining or odor. Sandy silt stringer at 57 feet bgs.	58.0		
0	12,18, 21,27	20		X	-60	ML		SANDY SILT: brown (7.5YR5/4); nonplastic, soft, moist; 35% very fine sand, poorly graded, subrounded; very light brown clay filling fractures and other voids; no staining or odor.	60.5		
0	23 16,18, 25	17		X				SILTY CLAY: brown (7.5YR4/3); very slightly plastic, firm, moist; 20% silt; fractures filled with very light brown clay; no staining or odor, silt and moisture content increase with depth.			-3/8" pressed, uncoated bentonite pelle
0	5,7, 20,23 10,19, 26	19		X	-65-	CL					(60.6-65 ft bgs
0	15,16, 23 4,16,	18		X		CL		SILTY CLAY: brown (7.5YR4/3); very slightly plastic, very firm, moist; 20% silt; minor very light brown clay in fractures; no staining or odor.	67.0		#2/12 Monterey sand (65-92.5 ft bgs
	17,24 18,22, 29	18		X	70-	SM		, SILTY SAND: brown (7.5YR5/4); 70% sand, very fine to coarse, ,— well graded, subangular to subrounded; 25% silt; 5% gravel to 25 /mm; no odor, moist.	69.7 70.2		4" diameter, 0.020", stainles
0	15,28, 30 16,20,	18		M		CL		CLAY: brown (7.5YR4/3); moist; 15% silt; very light brown clay in minor fractures or root structures; trace gravel to 25 mm, angular to subangular; no staining or odor.			steel, wire wrap screen (70.89-90.89 ft

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# **BORING/WELL CONSTRUCTION LOG**

PROJECT NUMBER 10500-30697-TO5B.INSTALL

BORING/WELL NUMBER OW-7 DATE DRILLED 3/13/02

PROJ	ECT NA	ME	Om	ega C	Chemica	al		DATE DRILLED 3/13/02  Continued from Previous Page	=		
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WELL I	DIAGRAM
PID (	38	RECC (incl	SAMP	K	(F. E.	U.S.	SP.		88		
0	7,9, 11 3,14, 16 3,8, 14,21	18 18 23 18		XXX	  	CL		SILTY CLAY: brown (7.5YR5/4); slightly plastic, moist; 25% silt; trace gravel to 25 mm; no staining or odor.  Vertical crack filled with sand and very light clay from 79 to 80 ft bgs.			;" diameter,
	20 13,16, 27	17		X				Groundwater at 81 ft bgs, saturated sand and gravel lens.  SANDY CLAYEY SILT: brown (7.5YR4/3); nonplastic to very	82.5		0.020", stainless steel, wire wrap screen 70.89-90.89 ft
0	8,14, 16,24 6,14, 13	18		X	- 85	ML		slightly plastic, saturated; 20% clay; 15% very fine sand; minor very light brown clay; no staining or odor.  SANDY CLAYEY SILT: brown (7.5YR4/3); nonplastic, hard, moist; very minor very light brown clay in voids; no staining or odor. No water in this material.	84.0		ogs).
0	10,16, 21 5,7, 10,12	18		X		ML			90.0		#2/12 Monterey sand (65-92.5 ft bgs).
				and the second s	90 			Total Depth of 8-inch pilot hole is 90 ft bgs, no further samples collected.  Total depth of 10-inch borehole is 92 ft bgs.	92.0		
											PAGE 3 O

### 18881 Von Karman Avenue, Suite 650 Irvine, CA 92612 BORING/WELL CONSTRUCTION LOG (949) 752-5452 (949) 752-1307 (FAX) BORING/WELL NUMBER OW-8 10500-30697-TO5B.INSTALL PROJECT NUMBER DATE DRILLED 3/13/02 PROJECT NAME Omega Chemical CASING TYPE/DIAMETER Sch 40, Mild Steel / 4" LOCATION 12511 Putnam St, Whittier, CA SCREEN TYPE/SLOT 4" Stainless Steel Wire Wrap / 0.020" DRILLING METHOD Hollow Stem Auger **GRAVEL PACK TYPE** Monterey #2/12 Modified CA Split Spoon SAMPLING METHOD **GROUT TYPE/QUANTITY** Portland Cement/5% Bentonite **GROUND ELEVATION** 199.03 STATIC WATER LEVEL (feet btoc) 65.00 TOP OF CASING 198.42 **GROUND WATER ELEVATION** 133.42 LOGGED BY W.F. Grove REMARKS CONTACT PID (ppm) RECOVERY (inches) GRAPHIC BLOW (f. BGL) U.S.C.S. SAMPLE WELL DIAGRAM LITHOLOGIC DESCRIPTION CONCRETE is 7 inches thick ROADBASE 1.0 SILTY CLAY: brown (7.5YR4/3); 70% clay with minor rock CL 2.0 fragments to 3-inch diameter (probable fill), very slightly plastic, firm, hard to dig, moist: 30% silt; moist, no odor. SILT: light brown (7.5YR6/4); nonplastic, soft, moist to damp, no 5,6, 18 7 3,4, 18 0 9,10, 23 11,12 4" diameter, sch 8,10, 18 40, mild steel 12 blank (0-60.38 ft bgs). 17 7,9, 11 0 50,50 17 CLAY: brown (7.5YR4/2); very slightly plastic, hard, firm, no CL 15.0 staining or odor. 21,40, 17 SILTY CLAY: brown (7.5YR4/2); very slightly plastic, firm, 50 moist; 30% silt; gravel/clay lens - trace gravel to 20 mm through 17,21, 18 25 0 23 16.22 25,30 Portland cement 12,17, 18 w/5% bentonite 21.0 21 grout CLAY: brown (7.5YR4/2); very slightly plastic, hard, moist; less (2-51 ft bgs). 17 13,18, than 10% sill. 24 2/0 22,29, 18 CL 50, 15.16. 17 26.0 20 SAND: brown (7.5YR4/3); fine to coarse, well graded, subangular SW 27.0 15,22. 18 to subrounded, moist; grading to very fine to fine, poorly graded, ML 29 subrounded at 27 feet, no odor. 28.0 NEWGINT.GDT SILT: brown (7.5YR4/3); nonplastic, soft, no staining or odor. 4/0 18,20, 23 CLAY: brown (7.5YR4/3); very slightly plastic, hard; trace 25,30 CI coarse sand to 5 mm; trace light brown clay in voids and cracks,

no staining or odor.

SILTY CLAY: brown (7.5RY4/3); very slightly plastic, firm/hard,

Continued Next Page

moist; 30% silt; trace coarse sand; no staining or odor.

41,50

25,26,

31

18,23,

26,30

OMEGA.GPJ

4/0

14

18

18

30.5

PAGE 1 OF 3

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## **BORING/WELL CONSTRUCTION LOG**

PROJECT NUMBER 10500-30697-TO5B.INSTALL PROJECT NAME

Omega Chemical

BORING/WELL NUMBER OW-8 DATE DRILLED

DATE DRILLED	3/13/02

HID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT	WE	ELL DIAGRAM
	14,17, 22	18		X					37.0		
	16,19, 26 20,24, 29,40	20		X		ML		SILT: brown (7.5YR4/3); nonplastic to very slightly plastic, soft to medium; interbedded with 3-inch thick clay stringers.	40.0		
1/0	23,27, 41 20,25, 32	18 14		X	-40- 	CL		SILTY CLAY: brown (7.5YR4/3); very slightly plastic, firm to hard, moist; trace gravel to 5 mm; no staining or odor.	40.0		4" diameter, sc 40, mild steel blank (0-60.38 ft bgs)
	22,25, 27,27	22		X		+			44.5		
0/0	8,12, 15	17		X	-45- -	ML		SILT: brown (7.5YR4/3); nonplastic, medium soft, moist; trace clay; no staining or odor.	47.0		Portland cemen w/5% bentonite grout
	12,15, 21 19,23, 26,28	16 20		X				SANDY SILT: light brown (7.5YR6/4); soft, moist; 35% very fine sand, poorly graded, subrounded; no staining or odor.			(2-51 ft bgs).
/2	17,21, 27	17		X	-50- 	ML					
2	15,20, 24 29,50,	17		X	-						3/8" pressed, uncoated bentonite pellet
	50, 19,24, 28	16		X	 - <sub>55</sub> -		1000	SAND: light brown (7.5YR6/4); clean sand, very fine to fine, poorly graded, subrounded, moist, no staining or odor.	54.0		(60.6-65 ft bgs
2	17,20, 25 50,50	14		X		SP					
	37,50	12		X	-60-	Ç.					#2/12 Monterey
	42,50	14		X					63.0		(55-81 ft bgs).
0	50,50	12		M		SP		SAND: light brown (7.5YR6/4); clean sand, very fine to medium, poorly graded, subrounded, moist, no staining or odor.	65.0		
	29,50 28,50	15 14		X	65 			SAND: light brown (7.5YR6/4); clean sand, very fine to medium, poorly graded, subrounded, saturated, no staining or odor. Groundwater encountered at 65 ft bgs.			
0	18,21, 25,30	22				SP					
	20,23,	16		X	-70 <i>-</i>						4" diameter, 0.020", stainles
0	15,19, 22 13,15,	15 24		X		sw		SAND: light brown (7.5YR6/4); fine to coarse, well graded, subangular to subrounded, saturated; no staining or odor. Sand heaving at 75 ft bgs.	72.0		steel, wire wrap screen (60.38-79.98 ft bgs).
	19,22			M	- 75-	577		Continued Next Page	75.0		

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### **BORING/WELL CONSTRUCTION LOG**

PROJECT NUMBER

NEWGINT OMEGA.GPJ NEWGINT.GDT 5/20/02

10500-30697-TO5B.INSTALL

BORING/WELL NUMBER

OW-8

Omega Chemical DATE DRILLED 3/13/02 **PROJECT NAME** Continued from Previous Page RECOVERY (inches) SAMPLE ID. CONTACT U.S.C.S. PID (ppm) DEPTH (ft. BGL) LITHOLOGIC DESCRIPTION WELL DIAGRAM 50 SAND: light brown (7.5YR6/4); medium to coarse, minor fine, well graded, subangular to subrounded, saturated. 4" diameter, SW 0.020", stainless 50 18 steel, wire wrap 78.0 screen 2/0 50 10 SANDY SILT: brown (7.5YR4/3); nonplastic, firm, moist; 25-30% (60.38-79.98 ft very fine sand; 5% gravel to 10 mm; light brown clay filling ML bgs). cracks and fractures. 80.0 Total Depth of 8-inch pilot hole is 80 ft bgs, no further samples 81.0 collected. Total Depth of 10-inch borehole is 81 ft bgs.

C			V		Irvine (949)	31 Telle e, CA 9 ) 752-5 ) 752-1	92612 5452	2	BORING/WEL	BORING/WELL CONSTRUCTION LOG					
PROJ	PROJECT NUMBER 10500-37240-T1.GW.Phase1a							ha	se1a BORING/WELL NUMBER	BORING/WELL NUMBER OW-8B REV					
PROJ	IECT N	AME	_Om	ega	Chem	ical			<b>DATE DRILLED</b> 8/16/04	1					
LOCA	ATION	12	511 Pu	ıtna	m St, V	Vhittier	, CA		CASING TYPE/DIAMETER	Sch 40,	PVC /	4"			
DRILI	LING M	ETHO	) <u>N</u>	1ud	Rotary				SCREEN TYPE/SLOT 4	l" Stainless S	Steel W	/ire Wrap /	0.020"		
SAME	PLING I	METHO	DD _	Mu	d Rota	ry Cutt	ings		GRAVEL PACK TYPE						
GRO	JND SL	JRFAC	E ELE	VΑ	TION (F	FT MSI	L)_N	Α	GROUT TYPE/QUANTITY						
TOP (	OF CAS	SING E	LEVA	ΓΙΟΙ	N (FT N	/ISL)	NA		STATIC WATER LEVEL (F	T BELOW T	OC) _	NM			
LOGO	SED BY	<b>/</b> _ W	.F. Gr	ove					GROUND WATER ELEVAT	TON (FT MS	iL) _				
REMA	ARKS	The	litholo	gy a	at OW-0	08 (10'	nortl	h),	was used from 0-71'. The geophysical log and cutting	s were used	from 7	1' to the to	tal depth of 143'.		
PID (ppm)	BLOW	RECOVERY (inches)	SAMPLE ID.	EXTENT	DEPTH (ft. bgs)	U.S.C.S.	GRAPHIC	507	LITHOLOGIC DESCRIPTION		CONTACT DEPTH	WEL	L DIAGRAM		
0	5,6, 7 3,4, 5 9,10, 11,12 8,10, 12 7,9, 11	18 18 23 18 17				CL			CONCRETE is 7 inches thick.  ROADBASE  SILTY CLAY: brown (7.5YR4/3); 70% clay with mirror fragments to 3-inch diameter (probable fill), very slabstic, firm, hard to dig, moist; 30% silt; moist, no SILT: light brown (7.5YR6/4); nonplastic, soft, moi damp, no odor.	iahtlv / <sup>-</sup>	0.6 1.0 2.0		Concrete (0-2 ft bgs)   12" x 3/8" mild steel conductor casing (0-91.4 ft bgs)		
0	50,50	17	l	<b>N</b> 4	l	I		Ш			440	UU = UU			

CLAY: brown (7.5YR4/2); very slightly plastic, hard, firm, CL 15.0 no staining or odor.
SILTY CLAY: brown (7.5YR4/2); very slightly plastic, firm, 4" sch 40 pvc, 21,40, 17 blank casing 50 moist; 30% silt; gravel/clay lens - trace gravel to 20 mm (0-116 ft bgs) through out 17,21 18 25 CL 16,22, 23 25,30 Portland 12,17, 18 cement w/ 5% bentonite gel 21.0 21 CLAY: brown (7.5YR4/2); very slightly plastic, hard, moist; grout 13,18, less than 10% silt. (2 - 110 ft bgs) 24 2/0 22,29, 18 CL 50, 15,16, 17 26.0 NEWGINT OMEGA.GPJ NEWGINT.GDT 12/15/04 20 SAND: brown (7.5YR4/3); fine to coarse, well graded, SW 27.0 15,22, 18 subangular to subrounded, moist; grading to very fine to fine, poorly graded, subrounded at 27 feet, no odor.
SILT: brown (7.5YR4/3); nonplastic, soft, no staining or 29 ML 28.0 4/0 18,20, 23 25,30 CL CLAY: brown (7.5YR4/3); very slightly plastic, hard; trace coarse sand to 5 mm; trace light brown clay in voids and 30.5 41,50 14 cracks, no staining or odor. SILTY CLAY: brown (7.5RY4/3); very slightly plastic, 25,26, firm/hard, moist; 30% silt; trace coarse sand; no staining 18 or odor. 31 4/0 18,23, 18 CL 26,30 35 Continued Next Page PAGE 1 OF 4



NEWGINT OMEGA.GPJ NEWGINT.GDT 12/15/04

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### **BORING/WELL CONSTRUCTION LOG**

**PROJECT NUMBER** 10500-37240-T1.GW.Phase1a

**BORING/WELL NUMBER** OW-8B REV **PROJECT NAME** Omega Chemical **DATE DRILLED** 8/16/04 Continued from Previous Page RECOVERY (inches) ₫ GRAPHIC LOG PID (ppm) BLOW COUNTS CONTACT DEPTH EXTENT U.S.C.S. DEPTH (ft. bgs) SAMPLE LITHOLOGIC DESCRIPTION WELL DIAGRAM 14,17 18 22 37.0 16,19 17 SILT: brown (7.5YR4/3); nonplastic to very slightly plastic, 26 soft to medium; interbedded with 3-inch thick clay 20,24 20 ML stringers. 29,40 40.0 SILTY CLAY: brown (7.5YR4/3); very slightly plastic, firm 18/0 23,27 18 to hard, moist; trace gravel to 5 mm; no staining or odor. 20,25 14 CL 32 22,25 22 27,27 44.5 SILT: brown (7.5YR4/3); nonplastic, medium soft, moist; 12" x 3/8" mild 10/0 8,12, 17 trace clay; no staining or odor. steel conductor ML 15 casing 47.0 (0-91.4 ft bgs) 12,15, 16 SANDY SILT: light brown (7.5YR6/4); soft, moist; 35% 21 very fine sand, poorly graded, subrounded; no staining or 19,23 20 odor. 26,28 4" sch 40 pvc, 17,21 18/2 17 ML blank casing 27 (0-116 ft bgs) 15,20, 17 24 29,50 4/2 18 54.0 50, SAND: light brown (7.5YR6/4); clean sand, very fine to fine, poorly graded, subrounded, moist, no staining or Portland 19,24 16 cement w/ 5% 28 bentonite gel 17,20 14 grout (2 - 110 ft bgs) 25 4/2 50,50 12 SP 37,50 12 42,50 14 63.0 SAND: light brown (7.5YR6/4); clean sand, very fine to 2/0 50.50 12 medium, poorly graded, subrounded, moist, no staining or SP 65.0 SAND: light brown (7.5YR6/4); clean sand, very fine to 29,50 15 medium, poorly graded, subrounded, saturated, no staining or odor. Groundwater encountered at 65 ft bgs. 28.50 14 SP 28/0 18,21 22 25,30 The lithology above 71 feet is from soil boring OW-8 from split spoon sampling. The lithology below 71 feet is from OW-8B, a mud rotary hole. 20,23 16 71.0 28 CLAY AND SILT: yellowish brown; 70% clay; 30% silt; high plasticity, high density, moist, no odor. CL 75.0

Continued Next Page



# **BORING/WELL CONSTRUCTION LOG**

PROJECT NUMBER 10500-37240-T1.GW.Phase1a

BORING/WELL NUMBER OW-8B REV

PROJECT NAME	_ Omega	a Chem	ical		DATE DRILLED 8/16/04			
					Continued from Previous Page			
PID (ppm) BLOW COUNTS RECOVERY (inches)	SAMPLE ID. EXTENT	DEPTH (ft. bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WEI	LL DIAGRAM
			CL		CLAY AND SILT: yellowish brown; 70% clay; 30% silt; high plasticity, high density, moist, no odor.			
			ML SM		SANDY SILT: yellowish brown; 50% silt; 30% sand, fine grained, subround to round; 10% gravel, fine to coarse grained, subround to round; 10% clay; medium density,	78.0 79.0 80.0		Deviler I
		80  	GM		moist, no odor. SILTY SAND WITH GRAVEL: yellowish brown; 50% sand, fine to coarse grained, subround to round, well graded; 20% silt; 20% gravel, fine to coarse grained, subround to round, well graded; 10% clay; moist to wet, no odor.			Portland cement w/ 5 bentonite ge grout (2 - 110 ft b
		85 85			SILTY GRAVEL WITH SAND: brown; 40% gravel, fine to coarse grained, subround to round, well graded; 30% sand, fine to coarse grained, round to subround, well graded; 30% silt; trace of cobbles, maximum diameter of 6 inches; high density, moist, no odor.	87.0		-4" sch 40 pv blank casin (0-116 ft bg
		 90-	CL		CLAY WITH SAND: brown; 85% clay, medium plasticity; 15% sand, poorly graded, fine to medium, mostly fine, subangular to subrounded.			42" 0/0"
	G	   395-			CLAY: brown; 95% clay, medium to high plasticity; 5% sand, poorly graded, medium, subangular to subrounded; trace silt.	92.0		12" x 3/8" m steel condu casing (0-91.4 ft bo
		   -100-	CH					
		  -105-	CL		CLAY: brown; 80% clay, 10% silt, medium plasticity; 10% sand, poorly graded, fine to medium, subangular to subrounded.	102.0		
		 110-	СН		CLAY: brown; 95% clay, high plasticity; 5% sand, poorly graded, fine to medium, subangular to subrounded.	108.0		
			CL		CLAY WITH SAND: brown; 85% clay, medium plasticity; 15% sand, poorly graded, fine to medium, subangular to subrounded; trace silt.	113.0		Plaster sand (110-111.3 bgs)
			ML		SANDY SILT: brown; 55% silt, 10% clay, low plasticity; 35% sand, fine to medium, subangular to subrounded.	115.0		



NEWGINT OMEGA.GPJ NEWGINT.GDT 12/15/04

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### **BORING/WELL CONSTRUCTION LOG**

**PROJECT NUMBER** 10500-37240-T1.GW.Phase1a **BORING/WELL NUMBER** OW-8B REV **PROJECT NAME** Omega Chemical **DATE DRILLED** 8/16/04 Continued from Previous Page RECOVERY (inches)  $\Box$ BLOW GRAPHIC LOG CONTACT DEPTH PID (ppm) EXTENT DEPTH (ft. bgs) U.S.C.S. SAMPLE LITHOLOGIC DESCRIPTION WELL DIAGRAM SANDY SILT: brown; 55% silt, 10% clay, low plasticity; 35% sand, fine to medium, subangular to subrounded. No. 2/12 Monterey sand ML (111.3 - 128 feet bgs) 119.0 SILTY SAND: light brown and brown; 80% sand, poorly graded, fine to medium, subangular to rounded; 20% silt, SM nonplastic. 4" stainless steel, 0.010" 122.0 wire wrap SAND WITH SILT: light brown; 95% sand, poorly graded, screen fine to medium, mostly fine, subangular to rounded; 5% (116 - 126 ft silt, nonplastic. bgs) 125 SP SM 129.0 CLAY: light brown; 90% clay, medium plasticity; 10% CL 131.0 SAND WITH SILT: light brown; 95% sand, poorly graded, SP 132.0 fine to medium, mostly fine, subangular to subrounded; SM 5% silt, nonplastic. CLAY: light brown; 90% clay, medium plasticity; 10% CL sand, poorly graded, fine to medium, mostly fine, subangular to subrounded. 135.0 135 SAND: light brown; 100% sand, poorly graded, fine to Hydrated medium, mostly fine, subangular to subrounded. bentonite chips (128 - 143 ft bgs) SP 140.0 CLAY: light brown; 90% clay, medium plasticity; 10% CL 141.0 sand, poorly graded, fine to medium, mostly fine, subangular to subrounded. SP SAND: light brown; 100% sand, poorly graded, fine to 143.0 medium, mostly fine, subangular to subrounded. Total depth is 143 feet bgs.